

SUSTAINABLE MOUNTAIN DEVELOPMENT

in the greater Himalayan region

The Next Five Years Changes and Challenges in the Himalayan Region

In this issue

Changes and Challenges in the Hindu Kush-Himalayas

Climate Change in the Hindu Kush-Himalayas – A Case for International Awareness, Solidarity and Cooperation

ICIMOD's Roadmap and Strategic Programmes



Contents



Changes and Challenges in the Hindu Kush-Himalayas: Implications for ICIMOD Andreas Schild, *Director General, ICIMOD; Kamal Banskota, Senior Economist, ICIMOD*

4

7

Climate Change in the Hindu Kush-Himalayas – A Case for International Awareness, Solidarity and Cooperation Jochen Kenneweg, *Chair, ICIMOD Support Group*



The Indian Himalayan Region: Harmonising Livelihoods and the Environment A Personal Essay Pradipto Ghosh, *Distinguished Fellow, The Energy and Resources Institute, New Delhi*

11

14

ICIMOD's Road Map for the Next Five Years Madhav Karki, *Deputy Director General-Programmes, ICIMOD*



Water in the Himalayas – Friend and Foe Mats Eriksson, *Acting Programme Manager, Integrated Water and Hazard Management, ICIMOD*

18

21

Enhancing the Ecosystem Services of the Hindu Kush-Himalayas: Climate Change Challenges and Opportunities Eklabya Sharma, *Programme Manager, Environmental Change and Ecosystem Services, ICIMOD*



Sustainable Livelihoods and Poverty Reduction Michael Kollmair, *Programme Manager, Sustainable Livelihoods and Poverty Reduction, ICIMOD*

24

26

Living with Honeybees – A Decade of Enrichment of Thought and Understanding Farooq Ahmad, *Coordinator Beekeeping Project, ICIMOD; Uma Partap, Research Officer, Pollination, ICIMOD*



Institutional Profiles: Kabul University and Poverty Alleviation Fund

31

CENTRE NEWS

Special Highlights

38th Meeting of the ICIMOD Board of Governors	33
Medium-Term Action Plan (MTAP) 2008-2012	34
Climate Change, Glaciers, and Water Resources in the HKH Region	36
Paradigm Shift in Viewing Forestry under Climate Change Accords	37
Symposium on Biodiversity Resources and Climate Change	39
Outcomes of the 2nd Annual Meeting of the Himalayan University Consortium	40
Switzerland and Sweden Support ICIMOD	41
New Regional Board Members	42
New Appointments	44
ICIMOD Workshops, Meetings, and Training Programmes	46
Mountain Forum/ Asia-Pacific Mountain Network (APMN)	48
New Memoranda of Understanding and Agreements	49
Outreach Activities	50
Recent ICIMOD publications	53

Dear Friends of ICIMOD

Mountain people are among the hardest hit by global warming, economic globalisation, and migration. These phenomena are particularly visible in the Hindu Kush-Himalayan region (HKH) where glaciers are melting at unprecedented rates, habitats and ecosystem services are being eroded, and the mountain communities are being increasingly feminised as male family members migrate to the lowlands, and often beyond national borders, in search of employment. While mountain people are particularly vulnerable, these changes impact on entire river basins and beyond, regionally and globally. The need to adapt and enhance the resilience of the mountain people is perhaps nowhere more urgent than in the HKH region. The challenges mountain people are facing are unprecedented, and their traditional coping mechanisms are overstretched.

What is at stake are the vast reserves of water stored in the HKH region, which directly and indirectly support the water and food needs of the mountain people and an even larger number of people downstream; and the environmental services the region provides for the livelihoods of mountain people and benefits downstream to lowlanders in terms of water and climate regulation services and soil. Together these have made agriculture possible for thousands of years. Despite its strategic role, the HKH region continues to be marginalised in the global discourse on climate change and adaptation. Not only is the hard science and climate-related data in relation to the HKH missing (as was pointed out recently by the International Panel on Climate Change), but also information on socioeconomic issues facing mountain people in the context of the changes is lacking. Without these, it is difficult to understand the extent of the impacts of global change, or to develop adaptation and resilience mechanisms. ICIMOD wants to play an important role in bridging this gap and become more relevant to its regional member countries, thereby drawing the attention of the global community to the HKH people and their environment.

At this point in time, it is both appropriate for ICIMOD to look back, reflecting upon its past, and to look forward, considering the future, to assess where and how it can be of greater relevance to its regional stakeholders. This year marks ICIMOD's 25th birthday and the end of the strategic framework phase that began in 2003. Within the last five years, the region has experienced many changes. Some of the larger countries (China, India, and Pakistan) have been experiencing high economic growth, while others are working hard to adjust to political changes. In 2006, ICIMOD underwent an independent evaluation commissioned by its Board of Governors. In 2007, ICIMOD's Board of Governors appointed a new Director General to ICIMOD. All these internal and external factors prompted ICIMOD to develop a new pragmatic and forward-looking Strategic Framework that not only addresses emerging challenges, but also helps ICIMOD to enhance its relevance to its regional member countries.

Narendra Bajracharya



The Norwegian delegation visits ICIMOD

This issue of the newsletter is, therefore, dedicated to the new Strategic Framework and how ICIMOD is preparing itself to meet the changes and challenges by working together with regional and global partners. I would like to thank Dr Kamal Banskota and the editorial team for preparing it.

Sincerely,
Andreas Schild
April 2008

Changes and Challenges in the Hindu Kush-Himalayas: Implications for ICIMOD

Andreas Schild, Director General, ICIMOD, aschild@icimod.org

Kamal Banskota, Senior Economist, ICIMOD, kbanskota@icimod.org



Alex Treadway

Sherpa settlement with the snowcapped peaks of Kantega and Thamserku behind, Khumbu region, Nepal

Three new drivers have shaped the evolution of the Hindu Kush-Himalayan (HKH) region during the last decades: climate change/global warming, globalisation, and population growth. Although mountain societies have in the past been fairly successful in adapting to such factors, in the present context, the changes and challenges taking place are so intense and rapid that traditional adaptation mechanisms are losing their efficacy.

The demand for adaptation is particularly high in the mountain areas of the HKH region by virtue of their inaccessibility, fragility, and marginality, which makes them relatively more vulnerable to the changes, given the backlog of unresolved problems relating primarily to livelihoods and the natural resource base.

The HKH range spans over 3500 km across varied geographical terrain and has many unparalleled characteristics. The range forms a barrier to the easterly monsoon winds and contains the largest deposits of snow and ice after the polar regions. Often referred to

as the 'third pole', the HKH range is the water tower of Asia and regulates the flow of nine major river systems in the region that serve a total population of almost one and a half billion. Moreover, the food and energy produced in these water basins leaves a footprint on up to three billion people.

Globalisation, through a combination of economic, technological, sociocultural, and political forces, has created many opportunities. Of these, market forces and communication technologies are perhaps the strongest and their effects have penetrated deep into

mountain areas. While there is no denying that market forces have brought benefits to mountain people (e.g., cheap manufactured goods and employment opportunities through migration and services), they have also brought lasting change to mountain people's lifestyles, disrupted traditional farming and cottage industry practices, and weakened the livelihoods and coping mechanisms of many mountain communities. While external migration has resulted in a large inflow of remittance income into national economies (in some small countries in the HKH such remittances are already exceeding overseas development assistance), this income has barely benefited mountain economies, but instead in many cases has increased the drudgery, workload, and responsibility of mountain women and marginalised minorities. The mountain people have been unable to realise many benefits resulting from globalisation due to inequalities in access to markets, capacities, technology, and information, as well as non-conducive policies. This situation has widened the income disparity between highlanders and lowlanders and resulted in the large-scale outmigration of men from mountain areas.

ICIMOD: meeting the challenge

Drawing on its accumulated institutional experience, ICIMOD conducted a series of consultations with strategic national partners in its regional member countries (RMCs) to identify and respond to the emerging challenges in the region. The conclusions from these consultations were submitted to ICIMOD's Programme Advisory Committee and the Board of Governors for scrutiny. The recommendations that emerged from these international and national consultations have been incorporated into a new strategic framework, which will enable ICIMOD to position itself to meet the new challenges and to realign its priorities and programmes with those of its RMCs. The framework identifies strategic programmes which advocate a holistic vision of mountain development and interdisciplinary problem analysis and programme design and planning.

ICIMOD endeavours to position itself as a demand-driven organisation with increased relevance to stakeholders. To achieve this, it aims at moving from a project-driven to a strategically-oriented programme mode, aligning its programmes with RMC priorities and international declarations (e.g. MDG, CBD).

As an international institution with a regional focus dedicated solely to the cause of mountain people and their environment, ICIMOD will consolidate its role as a knowledge, learning, and enabling centre. It will conduct pilot action research with partners, thus generating new knowledge. It will also facilitate the customising of global

knowledge and package it for use in the region. ICIMOD intends to be a regional knowledge 'hub' for sharing knowledge generated in the region and beyond.

Why ICIMOD?

The Asian context, in which ICIMOD has evolved, has experienced epochal changes during the last 25 years. Some of ICIMOD's regional member countries have experienced extraordinary growth. These changes have affected the environment and climate in the HKH and have created an increased awareness of development issues, political impacts, communications, and others. Global and regional changes have also triggered changes in the regional institutional landscape. New and stronger institutions addressing environmental issues have emerged. In this context, the following question was put to regional stakeholders: Why is a regional organisation like ICIMOD required and what should be the additional value of such an organisation?

The increasing awareness of the importance of sustainable mountain systems in relation to global warming offers a new chance to call for a specific mountain agenda.

Regional and national policy priorities driven by the economic potential of urban growth centres, have not addressed mountain development. Although ICIMOD pioneered mountain development and mountain specific approaches, it has not so far managed to mainstream the concept of a specific mountain agenda for development of the HKH region. The increasing awareness of the importance of sustainable mountain systems in relation to global warming offers a new chance to call for a specific mountain agenda.

Existing data generated by national and international institutions in the HKH region are often partial, fragmented, scattered, and incomplete because of the focus on accessible areas. The lack of systematic, consistent, and comprehensive knowledge on socio-economic and environmental conditions in the HKH region has prevented a comprehensive understanding of the region and the design of appropriate strategies. The International Panel on Climate Change (IPCC) refers to the HKH as a 'white spot' from a scientific point of view. Too many efforts lack the necessary continuity and institutional backing. ICIMOD wants to make a substantial contribution to bridge this gap.

In general, the valuable knowledge generated by HKH institutions is limited to their own country's territory. Today we know that adaptation to climate change and the long-term and equitable use of scarce resources needs a regional, transboundary approach. National information has to become regional knowledge. ICIMOD

can contribute the process of sharing national experiences and making information regionally accessible both as a regional hub and by facilitating transboundary dialogue.

The sustainable management of water resources and the provision of ecosystem services call for the establishment of upstream-downstream relationships. ICIMOD, as an intergovernmental institution, can play a catalytic role in promoting transboundary dialogue between member countries on such issues:

- Based on almost 25 years of functioning as a regional platform, ICIMOD has developed a large network of partners. This is a sound basis for scaling up good practices, harmonising methodologies and approaches, and contributing to the customising of international experience to the specific needs of its regional member countries.
- ICIMOD provides a bridge between research and the application of the knowledge generated by research, ensuring that good practices, important breakthroughs, and global innovations are packaged for use by the regional stakeholders enabling them to address the potential challenges of change in mountain regions.
- The HKH mountain system, its inhabitants, and ICIMOD's regional member countries are facing a

challenge of enormous dimensions. Therefore, a small institution like ICIMOD has to set its priorities carefully. A main concern is the access to global resources and centres of excellence for the benefit of sustainable development of the HKH region.

Focus and impacts

ICIMOD's Strategic Framework, briefly described above, sets ICIMOD's road map for the coming years. Guided by this framework, inputs from the Board of Governors, and extensive consultations with partner organisations (both regional and non-regional), ICIMOD has developed a five-year strategic Medium-Term Action Plan (MTAP) for 2008-2012. ICIMOD realises that business as usual will not deliver results relevant to its regional member countries. There is a need for a greater and deeper focus. Therefore, given the challenges faced, the national priorities of the RMCs, and the competencies ICIMOD has developed over the last two and half decades, the new MTAP is organised around three strategic programmes: Integrated Water and Hazard Management (IWHM), Environmental Change and Ecosystem Services (ECES), and Sustainable Livelihoods and Poverty Reduction (SLPR).

In IWHM, ICIMOD will focus primarily on climate change and its impact on the water tower of Asia, starting from the cryosphere (snow and ice). This programme has a macro focus on the region's water basins, the sustainable harnessing of water resources, and the management of water related hazards.

ECES has a more meso-mountain level focus and will address upstream-downstream relationships. Watersheds are characterised by ecosystems rich in biodiversity and environmental services, but which are under increasing threats from global warming and human interference. The livelihoods of a large majority of mountain people continue to depend on community resources and hence management of watersheds and natural resources are critical in this programme.

ICIMOD is not undertaking poverty reduction at the grassroots or micro-level. However, through SLPR, ICIMOD will facilitate poverty reduction or livelihood improvement by generating examples and establishing good practices that have the potential to be scaled up, or which are useful in influencing policy makers. In addition ICIMOD will also facilitate the transfer of good practices across the region.

Finally, in the long run, ICIMOD expects three major results: equitable and sustainable water management (at the macro-level), the provision of stable ecosystem services (at the meso-level), and the generation of more sustainable livelihoods (at the micro-level) in the HKH region.

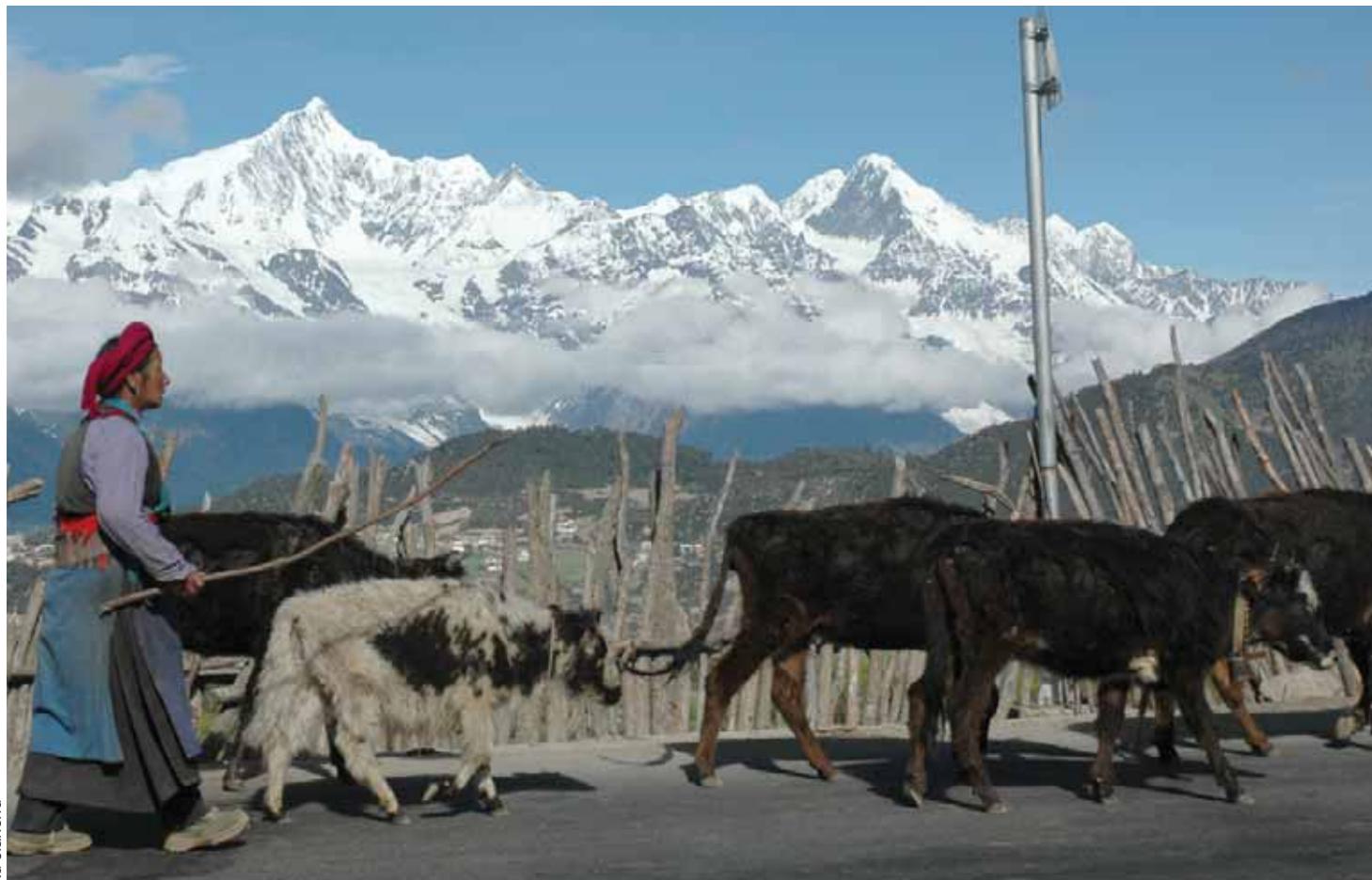


Paribesh Pradhan

Porters carrying fodder for yaks to Shomare village in the Khumbu region, Nepal

Climate Change in the Hindu Kush-Himalayas – A Case for International Awareness, Solidarity and Cooperation

Jochen Kenneweg, Chair, ICIMOD Support Group; Federal Ministry for Economic Cooperation and Development, Germany (retired), jochen.kenneweg@t-online.de



Xu Jianchu

Villager driving cattle against a backdrop of snowcapped peaks in northwest Yunnan, PR China

Climate change and its consequences have become a well accepted truth, highly relevant for the Hindu Kush-Himalayan (HKH) region. They have become a central theme in ICIMOD's new strategy and hence appropriate responses to climate change will be very much at the centre of ICIMOD's future activities.

It is anticipated that cooperating partners from outside the region will be increasingly attracted by the climate change focus and the issue of climate change will be of interest to most of ICIMOD's regional development partners. For the international partners, however, support for ICIMOD will be only one, relatively limited, component of their cooperation activities in the region. In relation to development cooperation, various bilaterally supported programmes with individual countries in the region will be far more important in terms of financial volume. Nevertheless, I am convinced that ICIMOD, if it continues to facilitate regional cooperation according to its own ambitions and plans, can expect growing interest and support.

The relevance of climate change

The IPCC reports of 2007¹ provided overwhelming evidence of the global relevance of climate change. Climate change and its related issues are unavoidably very high on political agendas in Europe and internationally, and also in Asia, including the HKH region. Defining and implementing adequate responses to climate change will pose significant political, economic, social, and institutional challenges. There will be contentious issues for many years to come. Climate change, in the words of Kofi Annan, is "...not just an environmental issue, as too many people still believe. It is an all-encompassing threat²". It will affect

¹ International Panel on Climate Change (IPCC), Fourth Assessment Report – Climate Change 2007, Reports from Working Groups and Synthesis Report

² The former Secretary General of the United Nations at the UN Conference on Climate Change, Nairobi, 15 November 2006



Kamal Banskota

Harvesting bamboo in the Arun valley in Nepal

the lives of people, rich and poor, in many parts of the world and more perceptibly over time. It will bring about negative, and some positive, effects on the environment. It will directly and indirectly change economic risks and opportunities. The effects will be uneven, very difficult to assess in detail, and hard to predict. Climate change will trigger far-reaching debates involving politicians and professionals, and, perhaps equally important, enterprises, engaged groups and individuals, and the population at large.

Climate change is specifically relevant to the HKH region. There are many references to South Asia, Southeast Asia, and the HKH in the IPCC reports. Key findings concerning future impacts on physical and biological systems or sectors, such as freshwater resources, ecosystems, and river basins, explicitly and implicitly point to the expected effects of climate change on the HKH. Decreases in the amount of water stored in glaciers and snow cover, reduced water availability, endangered biodiversity systems, and flooding from rivers due to more frequent extreme weather events are some of the expected impacts³. The vulnerability of the region, its countries, and, particularly, of poor communities is clear.

International responsibility to act in terms of mitigation and adaptation

The outcomes of the Bali Conference suggest that there is a fast growing consensus on the urgency to act. It can be assumed that coordinated action is in the interests of

all countries and of all country groups. The Bali Plan of Action⁴ is based on recognition of the fact that mitigation and adaptation have to be pursued simultaneously. It will by no means be easy to arrive at a balance of interests when it comes to mitigation commitments and actions. Nevertheless, all countries and international actors are called upon to cooperate, despite their differences in position, point of view, and approach. The Bali Conference underlined the guiding “principle of common but differentiated responsibilities and respective capabilities”.

It is an accepted fact that the highly industrialised countries have been the main source of greenhouse gas emissions, especially CO₂ emissions, which are the major cause of climate change. Hence, many people in developed countries share the view that past industrial practices and the degree of exploitation of carbon-based energy sources should be considered when responsibility for future action and commitment is discussed. History, a feeling for global socioeconomic justice, as well as perspectives for the future, should guide their leaders. As maps of vulnerability show, the negative consequences of climate change will be most marked for poor people in relatively poor countries and regions. In many cases, the people who have contributed the least to the major causes of climate change will be the most severely affected. The burden of far-reaching adaptation often has to be shouldered by countries, institutions, and people with limited capacity and resources. In aggregate, the necessary reaction to climate change will not be achieved unless developing countries and emerging economies, in particular, cooperate actively and take decisive action⁵.

The processes which will lead to the new balance between environmental and economic interests are still in the early stages. The European Union, which claims to play a leading international mediating role in climate protection, proposed through the EU Commission on 23 January 2008, a package of decisions concerning the efforts of EU Member States to reduce their greenhouse gas emissions by 2020⁶. A very difficult negotiation process can be expected to follow.

Climate change ranks very high on the development cooperation agenda. Africa will receive much of the related attention and assistance, but trends and impacts in Asia will not be overlooked. The Environment Profile Asia, drawn up in 2007 for the Federal Ministry for Economic Cooperation and Development (BMZ) in Germany refers, for example, to climate change

³ See among other documents: International Panel on Climate Change (IPCC), Climate Change 2007: Impacts, Adaptation and Vulnerability, Working Group II Contribution to the IPCC Fourth Assessment Report, Summary for Policy Makers, pp 5-8

⁴ http://unfccc.int/meetings/cop_13/items

⁵ It has been estimated that 90% of the increase in greenhouse gases until 2012 will be emitted by emerging economies and developing countries.

⁶ Commission of the European Communities (2008): Proposal for a decision of the EU Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, COM (2008) 17 final; available at http://ec.europa.eu/environment/climat/climate_action.htm

(mitigation and adaptation) as priority action areas. The 2008 BMZ budget allocates €700 million to climate change measures.

Security considerations

It is increasingly recognised by the international community that climate change will be accompanied by growing security risks. In my own country, the German Advisory Council on Global Change (WBGU)⁷ chose this subject as the theme for its 2007 main report⁸. The report presents two core messages at the outset.

First, without decisive counteraction, climate change will overtax the capacities of many societies to cope with the mounting problems; this could result in insecurity, destabilisation, and violence. Second, a joint response to climate change as an accepted common call for cooperation could also unite the international community and ultimately lead to a globally coordinated policy.

The effects of climate change will exacerbate existing environmental and other crises, particularly in conflict-prone regions. The probability of more poverty, inequality, and social deprivation will increase. The report analyses the potential causes and implications of what it calls conflict constellations including the degradation of freshwater resources, decline in food production, increase in storm and flood disasters, and migration. The WBGU also expects new, climate-

A joint response to climate change as an accepted common call for cooperation could also unite the international community and ultimately lead to a globally coordinated policy.

induced conflict constellations to occur⁹. The WBGU report also takes a closer look at selected regional 'hotspots of climate change', among them the South Asian region of India, Pakistan, and Bangladesh. The potential for social crisis in the region is emphasised, given the existing cross-border conflicts and the instability of governments in some of the countries.

The report pays special attention to fragile and weak states. It is not only their populations that are vulnerable, their institutions will also struggle with the additional stresses and challenges placed on them by climate change. The WBGU fears that the number of weak and fragile states may increase as a result of climate change. One of the recommendations in the report asks for enhanced efforts to help stabilise those states. In this



Kamal Banskota

Preparing a field for planting maize, Gorkha, Nepal

context, I would also like to point out another aspect: although countries may be as fragile and prone to conflict, they and their societies still provide indispensable resources and services to their neighbours and beyond. There are institutions, professionals, and other individuals with tremendous knowledge, insight, and experience who are able to deal and live with a changing environment. It is imperative to make use of the existing capacity and offer support to enhance it.

The need to fill gaps of knowledge and research

The IPCC based its reports on a tremendous body of research results. However, there are still important gaps. Working Group II of the IPCC, summarising information on the impacts and costs of climate change, stated that "aggregate estimates of costs mask significant differences in impacts across sectors, regions, countries, and populations"¹⁰. Concerning adaptation measures, the report continues: "At present

we do not have a clear picture of the limits to adaptation, or the cost, partly because effective adaptation measures are highly dependent on specific geographical and climate risk factors as well as institutional, political, and financial constraints"¹¹. The WBGU report of 2007 argues strongly in favour of a "long-term focus for political economic and societal actors"¹². From the perspective of the HKH region, some of the report's recommendations for further research could be underlined. For example, the recommendations for research into adaptation strategies in developing countries and "preventive strategies to stabilise fragile states", taking into account, among other aspects, the heterogeneity of the affected states and the functioning of public institutions and non-state actors. In relation to conflict constellations, the report advises that further

⁷ Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (WBGU)

⁸ English version 'Climate Change as a Security Risk', first published by Earthscan, London, 2008; summary available at www.wbgu.de/wbgu_jg2007_kurz_engl.html

⁹ WBGU (2007): Climate Change as a Security Risk, p.2

¹⁰ IPCC (2007), Working Group II, p.16

¹¹ IPCC (2007), Working Group II, p.17

¹² WBGU (2007), p.181

research should be conducted with a view to understanding “the causal linkages at the interface between climate impacts and society, the dynamics of which have the potential to bring about social destabilisation or violence”¹³. Not surprisingly, issues of water balance, water management, and flood disasters are among the identified research requirements.

Interests of external partners in the HKH region

I will focus here on the role of development partners, being aware that outside countries and organisations have many and varied interests in the region. Development partners will be concerned because of the scale of the anticipated impacts of climate change, which will affect many millions of people, both in mountain areas and in the densely populated river basins below. The likelihood of achieving development goals will be endangered and the related processes may be prolonged and become more costly. Identifying and preparing adaptation and prevention measures requires the appropriate capacities. Capacities in terms of qualified human resources and institutions are being set up rapidly in the region. However, they are distributed unevenly and important deficiencies remain. For several international partners, the existence and effectiveness

ICIMOD is the only regional organisation with a specific mountain agenda, which makes it even more pivotal in relation to climate change in the HKH.

of cross-boundary cooperation on a regional scale is an important factor in determining their own contribution. Climate change in the HKH is challenging government institutions, academia, and other organisations in the world’s most populous countries, China and India. It also calls for cooperation between India and Pakistan, and India and Bangladesh – countries that have both shared and conflicting interests and preoccupations. The interests of very large and relatively small countries must also be balanced. Sensitivities, resentment, temptations to use power, and existing or perceived superiority must be recognised and overcome where possible.

Reasons for cooperating with ICIMOD

Considering the relevance of climate change to the HKH, international partners have good reason to cooperate with ICIMOD. The Centre is well placed as an organisational hub for its partners to broaden and deepen knowledge about the region, its natural resources, and the management thereof, and about cross-border interlinkages between ecosystems. ICIMOD serves as a platform for exchange of approaches and practical experiences. ICIMOD’s focus on three new strategic programmes – Integrated Water and Hazard Management, Environmental Change and

Ecosystem Services, and Sustainable Livelihoods and Poverty Reduction – appears to be well considered and justified. Through established long-term partnerships and experience in cooperation, ICIMOD has gained deep insight into the societies in the region and their cultures. The landscape of institutions and their capacities and potential is well known to ICIMOD. The Centre has shown that it can serve as a vehicle for fostering cooperation between very different organisations, state and non-state, and between organisations and people. Scaling up and scaling down (or customising) are key concepts characterising ICIMOD’s mode of operation. ICIMOD helps to scale up programme activities, with approaches that have been proven in practice. ICIMOD can also be instrumental in making knowledge about global trends and impacts, such as the consequences of climate change, more easily accessible and more applicable at the regional and local level. It can assist in identifying gaps in knowledge, particularly those at the regional level. ICIMOD can work on research and research recommendations. This seems to be particularly promising because of the widely held view that there are dispersed research results on climate change in the region, which need more comparison and integration. ICIMOD can help to develop vulnerability studies and adaptation strategies. ICIMOD’s effectiveness in such roles is enhanced by the fact that it is a non-political organisation. The resolution of political conflict must be done at other levels.

Being one of several organisations concerned with environmental issues in the region, ICIMOD will continue to fine-tune its position, as well as to strengthen cooperation and relationships with its partner organisations. ICIMOD is the only regional organisation with a specific mountain agenda, which makes it even more pivotal in relation to climate change in the HKH.

ICIMOD’s history, mission, and openness, embedded in statutes and cooperation, bring together a great variety of partners. Evidently, there is continued interest in ICIMOD by its regional member countries, large and small, some emerging as global players, others struggling with severe economic and security problems. All have recognised that a coordinated response to climate change is essential, and that ICIMOD should play a more ambitious role. International support for ICIMOD has been provided, so far, by a stable, but limited, number of funding partners. In a way, it is surprising that the number has not grown beyond a rather small circle, convinced by the cause of mountain development a long time ago. There is the hope and the prospect, however, that this will be different in future under the influence of the climate change agenda. With its new strategy and Medium-Term Action Plan, ICIMOD has taken up the challenge.

¹³ WBGU (2007), p.184

The Indian Himalayan Region: Harmonising Livelihoods and the Environment

A Personal Essay

Prodipto Ghosh, Distinguished Fellow, The Energy and Resources Institute, India, prodipto5@gmail.com



Kamal Banskota

Landscape in North East India

About 120 million years ago, the world was a different place. Two large land plates, now known as India and South America, were adrift in the southern ocean, having been excised through geological upheavals from the great mother continent of Gondwanaland, but still bearing in their vegetation and animal forms evidence of their common origin.

Then, about 40 million years ago, two landmasses, those of India and Eurasia, collided, leading to huge tectonic events. At their junction arose the majestic Himalayas, the world's highest mountain range with peaks of nearly 9000m, which are still rising about 5 cm a year as the Indian plate has not yet fully come to rest. The new mountain ranges walled-in the warm, moisture laden winds from the southern ocean, and the Indo-Gangetic Plain and the plateau of the Deccan gained their summer monsoon climate, their magnificent rivers, their silt-laden plains, and their ability to give and sustain life. The heart of Central Asia turned cold, dry, and much less hospitable to life than it had been earlier.

Gradually, modern humans, *Homo sapiens*, evolved on earth from their primate ancestors, *Homo erectus*. From their original home in what is now the Kenyan Highlands, this curious, intelligent, but vulnerable species with strong instincts of territory and kinship made its way across the world. Thus, humans found their way to India, and indeed, eventually, to all habitable continents, overcoming barriers of geography and climate. Some groups adapted to life in the high Himalayas, others took to the plains and the Deccan. In the course of millennia, they coalesced into hunter-gatherer bands, then took to agriculture and trade, and started living in villages and towns. These communities eventually grew



Harvesting tea in Assam, India

into civilizations, kingdoms, and empires. Peoples from other regions also trickled in, mostly with peaceful intentions of settling down in harmony with the original inhabitants, but some in a rush to conquer the land and subjugate its people. Eventually, all were assimilated into the great melting pot of the human race. The population increased to scores, then hundreds of millions. Their incredible heterogeneity was reflected in their many languages, dialects, religions, sects, and, indeed, the diversity in their physiognomies. Science, mathematics, the arts, drama, sculpture, and architecture flourished and spread through the entire ancient world.

How exactly was this flowering of the human spirit sustained? What gives stability and renewal to the material basis of this millennia-old culture? And what are the prospects that the universal human urge for a better life can be addressed without its irreparable degradation?

The monsoon rains drench the Indian landmass once the peak of summer has passed. In the mountains, the water soaks into the soil and the underground aquifers. The momentum of the rains is arrested by the thick canopy of the forests and their natural carpet of fallen leaves. The mountain forests also generate fresh soil from hard rock by complex physical, chemical, and biological processes in their roots. The retarded surface run-off from the monsoon torrent merges into a skein of delicate streams and, eventually, into mighty rivers, carrying off the fertile, older soil to be deposited tens, or perhaps thousands, of miles away in the flood plains and irrigated farms that nourish many millions. Later, in the winter, it does not rain, but snows. The snow settles on the mountain slopes and congeals into the rivers of ice, called glaciers, which creep slowly down. Still later, as the sun gains in ferocity, the snow and ice melt, the rivers are once more replenished, and the thirsty population gets its drinking water.

The mountains and their mantle of forest do more. The mountain slopes and valleys, with their widely varying aspects exposed to the sun, rain, and wind yield a rich spectrum of ecologies. In their forests, pastures, streams, and lakes a myriad of life-forms, from micro-organisms to the many species of plants, insects, birds, mammals, and reptiles, compete for sun, soil, water, heat, and nourishment, often living off each other, either as predators or parasites, or in symbiotic relationships. The many varieties thus constantly evolve, as random variations produce new candidates and natural selection picks the survivors. The complexity of these ecological relationships ensures that the system as a whole survives prolonged

droughts, spells of excess rain, storms, or the landslides and earthquakes which are evidence of the newborn character of the mountains in geological terms.

The diversity of plants and their insect benefactors are a genetic repository for the breeding of new crops by farmers, and the flora of the mountain forests are the basis of traditional medicine. The local people's traditional knowledge of such plants and creatures anticipates modern science, and can indeed add immense value to efforts in the latter domain for the benefit of all humankind. But the mountain forests also yield food, fuel, and timber for the local population. They stabilise the loose soil and rocks on the slopes, and thus prevent or mitigate landslides; calamities that could in an instant engulf whole villages that have stood for centuries, and that enshrine the memories of families and the history of clans.

The peoples of the mountains, each in their valley fastness, segregated from one another by high ridges as well as largely from the plains, developed a patchwork of languages, cultures, and ways of making a living. Their ecologies were highly varied due to variations in sun, rain, vegetation, and elevation. Some evolved into settled agriculture and traded with the plains and the highlands to the north. Others found that shifting cultivation or hunting-gathering was more attuned to their resources and temperaments. Over the last century, as populations grew, the mountain's natural endowments came under pressure and the youth turned to the city lights of the industrial revolution taking shape surely and rapidly in the plains.

Mountain people were never rich, but now the disparities between them and the city folk began to rankle. They desired, for the present, some of the necessities of a decent life, like clean water from a tap, so that their women folk would not have to trudge uphill and down to fetch water from mountain streams; sanitation, so that

answering the call of nature did not involve the risk of an encounter with a leopard, nor cause intestinal disease; homes that were safe from earthquakes and warm in winter; and clean fuel for their hearths, so that their wives and children would not die early of emphysema. They desired roads, because roads eliminate mental, no less than physical, distance, and electricity, so that light, communications, and information could stream in and so that they would know of important, distant events. Their youth would not be content with being casual domestics and sentries in the city, as their fathers had been. They aspired to education, education that terminates past social and economic disadvantages. The education which they believe would one day fill the hills with the relief of prosperity.

The climate of India, the water in its rivers, the soil on its farms, and its wealth of life forms are all ultimately the gift of the mountains and depend on the wise stewardship of resources by the mountain people. Until now, mountain people have received only symbolic acknowledgement for this stewardship. But they have understood that they are poor, that poverty is demeaning, and poverty is the absence of many things, mostly material ones. Their stirrings for development, no less than in the plains, must, however, disturb their ancient ways of husbandry.

The hydropower dams that yield the magic electricity would also submerge pristine forest and disintegrate whole communities. The roads that bring the teachers and take the seriously ill to hospital would provide pathways for the illicit, nocturnal plunder of the forests by contractors and their accomplices. There would be landslides and long-established hydrologies would be arrested; the rivers would run dry and drinking water would vanish. The roads would help convert terraced crop fields to orchards, and the carefully husbanded traditional crop strains would disappear. And while traditional medicine is investigated by industry, its plant base in the forests is being depleted. The mountain folk take refuge in rapid-cure allopathy and no-one goes to the elderly vaids, and gradually their accumulated knowledge is lost. The pucca homes would be built of brick and cement, and the clay and limestone to make these would be cratered out of the valleys and hillsides. In part, a better life would come with the roads and electricity and sanitation, and with them, resorts offering better-paid jobs to English speaking waiters and bellboys to serve regiments of well-attired tourists.

The mountains are thus the stage for a tragic conundrum. On the one hand, mountain people have realised some of their hopes for a better life. On the other, the natural resource base to sustain this life, and the ecological

basis of the ancient civilization, its water, soil, and the genetic diversity of its creatures, is being diminished. The loss of the forests will also impact on the world's climate, and the loss of the genetic pool will harm the future well-being of everyone. It is, of course, paternalistic and rude to ask the hill people to eschew the modern, industrial lifestyle and "not to repeat our mistakes". But, there are things that the national government and the global community can do to forestall a tragedy.

The first is to develop the techniques and regulatory structures to ensure that the needed infrastructure for electricity, roads, hotels, and housing does minimal damage to the ecology. Infrastructure one must not prevent; but prevent one must unnecessary damage to natural resources. If these measures cost money, the nation as a whole must provide it.

The second is to restore the rights of management of the forests to mountain people. Not to deny the science of forestry, but to ensure that the science is applied by and for them. Forest departments must accept partnership with hill people, not seek to control them for all time. The (illicit) forest contractors would then find no local accomplices and every hill person would become a willing forest guard.

The climate of India, the water in its rivers, the soil on its farms, and its wealth of life forms are all ultimately the gift of the mountains and depend on the wise stewardship of resources by the mountain people.

The third is to realise the actual, material benefit of the genetic pool in the mountains, and the borrowing by others of the genes and traditional knowledge of these resources. A global treaty on access and benefit sharing is essential. In its turn, national governments must ensure that these benefits, in full measure, flow to mountain people.

The fourth is to give fair value for the produce of the mountains. For the native grains and fruit, full of taste and wholesomeness; for the splendour of the experience of the landscapes, biospheres, and sanctuaries; for the hosting of dams and the electricity and irrigation services they provide; for the timber and medicinal plants; and for keeping under lock huge stores of carbon in the forests.

And, finally, education. Education everywhere. In the mountains, in the plains, in the whole world. Education in the sciences, in mathematics, and in useful languages. Education for better livelihoods through the capacity to absorb new technology and innovate. Education to ensure better awareness of the planet's many mysteries, its very fragility. Education to instil respect for the earth, for all its creatures, its non-living entities, and for all humans.

ICIMOD's Road Map for the Next Five Years

Madhav Karki, Deputy Director General-Programmes, ICIMOD, mkarki@icimod.org



Kamal Banskota

A fertile river valley in the Nepal mid hills

Since its establishment in 1983, ICIMOD has been working to improve the environmental conditions of the HKH region and livelihoods of poor mountain people. The primary objective of ICIMOD as per its statutes is to 'help promote the development of an economically and environmentally sound mountain ecosystem and to improve the living standards of mountain populations of the Hindu Kush-Himalayan region.

To this end the Centre is expected to serve

- a) as a multidisciplinary documentation centre;
- b) as a focal point for training and applied research activities; and
- c) as a consultative centre in scientific and technical matters for all the countries of the region.

ICIMOD is unique in being one of only a very few regional intergovernmental organisations and, as such, it shares part of the agenda with some Consultative Group for International Agricultural Research (CGIAR) institutions, specialised UN organisations like the United Nations University (UNU), and international non-government organisations like the International Union for Conservation of Nature (IUCN) and World Wide

Fund for Nature (WWF). The specificity of ICIMOD in this context is its mountain perspective – the fact that it is positioned between research and practice and its ability to address transboundary issues in a pragmatic, non-bureaucratic, and technical manner by promoting regional cooperation.

During the last five years, there has been an increased regional awareness of how global and regional changes, especially those related to climate and globalisation, can directly influence livelihoods, and of the consequences they can have in terms of natural hazards. In response, ICIMOD member countries have created centres whose goal is to improve preparedness for disaster management and to put adaptation and mitigation

measures in place; these need further strengthening and regional networking. Since these national centres often have more resources than ICIMOD, they are in a better position to provide the quality and quantity of research needed at the national level. ICIMOD has an important role to play in bringing in the regional perspective. This change in the institutional landscape of the region means that ICIMOD will have to rethink its mode of operation and redefine its role as a regional learning, knowledge and enabling centre.

ICIMOD's new strategy

In January 2008, ICIMOD commenced implementation of its new strategic framework and Medium-Term Action Plan 2008-2012 (MTAP II). These set ICIMOD's course for the next five years. This article highlights some of the salient features of the strategic framework and the programmatic plan. The strategy describe five strategic goals (see box). The MTAP is guided by the framework, and is based on the directives of the Board of Governors and the ICIMOD Support Group and recommendations from an external review of ICIMOD conducted in 2006. The draft plan was discussed in national and regional consultations held in all eight ICIMOD member countries, as well as in a regional consultation organised at ICIMOD. These consultations were in most cases attended by the board members of the concerned country, senior policy makers, and members of ICIMOD's partner institutions (including GOs, NGOs, academic institutions, and research organisations). Some of the key recommendations made during the consultations were that ICIMOD should

- scale up its pilot projects, nationally and regionally, through its strong relationship with, and commitment from, its RMC partners;
- develop partnerships and realign itself with other centres of excellence in its RMCs;
- closely engage with national strategic partners from the planning phase onwards to avoid duplication;
- address climate change related impacts, especially expected water shortages and the degradation of environment services; and
- focus on high value products, their marketing, and value addition, and influence value chains.

Preparation of thematic and annual plans

Programmatic Framework

During the in-house planning exercise, three strategic programmes were defined and the medium-term and annual action plans were prepared: a) Integrated Water and Hazard Management, b) Adaptation to Environmental Change and Ecosystem Services, and c) Sustainable Livelihoods and Poverty Reduction. Each programme was further defined in terms of expected outcomes. Nine action areas, each headed by a team

ICIMOD's Five Strategic Goals

1. ICIMOD's knowledge and technical expertise are widely used and mainstreamed by its RMCs in their water, ecosystem services, and poverty reduction programmes, and contributes to the improvement of mountain people's livelihoods.
2. There is close collaboration with national partners through long-term, regional research and the scaling up of programmes, adding value and creating impacts.
3. ICIMOD's transboundary and regional approach, experiences, practices, and know-how are utilised regionally and globally.
4. ICIMOD is pro-actively learning and gaining in terms of knowledge and good practices and benefiting RMC partners through capacity building and knowledge sharing.
5. ICIMOD's support in strengthening key RMC institutions to better address water, ecosystem services, and livelihood related issues in the region results in a vibrant knowledge management and information sharing network.

leader, were identified to support the three programmes, with interdisciplinary team members drawn from all three programmes and knowledge management units. The action areas define the actions that will be implemented under each of the three strategic programmes working with and through our partners in the RMCs. The regional programmes (long-term research programmes, regional development pilot activities, and others) will function



Asha Kaji Thaku

Fruit is a useful cash crop for mountain farmers



Govinda Nepal

Women's group meeting on renewable energy, Palpa, Nepal

through ICIMOD's headquarters, but will be linked to partners in a programmatic manner. In order to enhance its role as a knowledge and learning centre, ICIMOD will develop knowledge resources to better implement its new action plans. Remote sensing and GIS will be developed as digitised information and learning resources linking partners across the entire HKH region and beyond. ICIMOD will be further developed and branded as a geo-information and knowledge resource centre. The publications policy and quality will be made audience-specific and will include electronic publications.

Strategic outputs and outcomes

ICIMOD staff were involved in the MTAP II planning process and transforming the five strategic goals into strategic outcomes at the thematic programme level. The outcomes are defined as changes or transformation in terms of behaviour, attitude, working styles, and processes of ICIMOD's boundary (direct) partners in the member countries in delivering their services to the primary stakeholders, i.e., mountain communities. The outcomes are also the short term impacts or the concrete area of contribution by ICIMOD's programme.

Importance of human resource development

To face the new challenges, ICIMOD is strengthening the capacities of its staff. A fully-fledged Human and Institutional Development (HID) unit has been created which will play a key role in scaling up good practices. In addition, ICIMOD also sees immense scope for the transfer of knowledge to universities in the region. For

this purpose, the Himalayan University Consortium (HUC) has been created. The HUC will focus on university faculty development, institutional capacity building, knowledge networking, and the development of a mountain-focused curricula and training. To gain relevant experience, ICIMOD will initially work with Afghan partner institutions on human capacity development.

MTAP implementation process

The implementation of MTAP II will commence by defining ICIMOD's annual plans in a more operational manner. The refinement and revision of the annual plans is being completed incorporating input given during the Board of Governors and Programme Advisory Committee meetings held in November 2007. The annual plans were finalised after a second round of consultation, which took place in each country between mid-February to mid-April 2008 to match the available resources and priorities of the countries with ICIMOD's plans. This is expected to improve the mainstreaming and alignment of ICIMOD plans with the priorities of its member countries.

Internally, several changes are also planned to qualitatively improve ICIMOD's overall output. From a programme perspective, gender and governance will be mainstreamed in all action areas of the Centre. A newly created economic analysis division will help strengthen ICIMOD's capacity in the area of environmental and institutional economics, which will be required by different action areas to deliver economically sound package of

practices to the RMCs. The strengthening of knowledge management in all programmes, as well as within the institution as a whole, will receive major attention.

Role of interdisciplinary action and functional coordination

Interdisciplinary coordination

Interdisciplinary coordination (i.e., the extraction of action area-based results and the management of these results to achieve programme level outcomes) will be the task of the programme managers in collaboration with action area team leaders. Quarterly, semi-annual, and annual monitoring of progress will be carried out by the Directorate through the Monitoring and Evaluation Unit, as well as in regular programme management committee meetings. The recently concluded two-week 'Change Management Training' workshop provided ICIMOD's professional staff with useful tools and techniques to work in interdisciplinary teams. Recent training on 'Management by Objectives' has taught staff about working in a matrix management format. Realising that ICIMOD's work will be judged on its performance using verifiable indicators, the MTAP proposes 13 strategic outputs and indicators to assess results at the end of five years.

Collaboration with RMCs

ICIMOD will strive to achieve excellence in problem-solving research related to climate change, the packaging of good practices, and building the mountain knowledge base to improve ecosystem services. In the area of livelihoods and poverty reduction, ICIMOD will focus on high value products and services and innovative livelihood options. Promoting participatory and community processes in livelihood resource management, regional approaches, and knowledge building will remain the bedrock of ICIMOD's work. ICIMOD will strengthen its support for the efforts of its RMC partners by scaling up successful activities and promoting national and sub-national networks and initiatives. Whether helping to build institutional capacity, or to produce results that will inform public policy and practices, ICIMOD will expect the work that it supports to be methodologically sound, scientifically valid, and relevant to the HKH region.

The information, knowledge, and technologies developed directly by ICIMOD, or indirectly through support to its RMCs, will be made readily available to ICIMOD's regional partners and global stakeholders. Consistent with ICIMOD's policies and practices, our partner institutions are expected to gradually develop ownership of ICIMOD supported work by being part of our newly defined scaling up of projects at national and sub-national levels. ICIMOD will implement projects through programmatic and collaborative arrangements

with its strategic and cooperation partners in the region. Cooperation partners are essential in helping ICIMOD to implement and scale up its findings and proposals, and they will be in the best position to judge the usefulness of ICIMOD's outputs. ICIMOD's partners are also a vital channel for feedback and are often the main medium by which ICIMOD learns from its projects.

Realising the goal of sustainable mountain development

In closing, ICIMOD plans to implement the MTAP II in a programmatic and collaborative manner. In doing so, ICIMOD hopes to contribute to the sustainable and equitable development of the HKH region and, thereby, strengthen its relevance and effectiveness to impact on the global environment, as well as the regional economy. For ICIMOD, sustainable mountain development means allowing mountain people to progressively meet their current needs, without jeopardising the ability of mountain natural resources to regenerate and reproduce to meet the needs of future generations. Equitable development implies that economic growth benefits poor and disadvantaged groups and that inequity and inequalities are progressively reduced.

ICIMOD will strive to achieve excellence in problem-solving research related to climate change, the packaging of good practices, and improving ecosystem services, and will focus on innovative livelihood options.

Conclusion

ICIMOD hopes that the expansion of local capability to generate, interpret, and apply knowledge will contribute to the creation of a facilitating and enabling environment for economic growth, social progress, and greater human freedom in the Himalayas. In determining how and where to direct its support for research, the Centre will respond to the priorities expressed by researchers and the policy community in its regional member countries, who share ICIMOD's commitment to sustainable and equitable development, poverty reduction, and environment conservation.

As the ICIMOD charter makes clear, the Centre will be more concerned with the generation of knowledge and scientific information for sustainable mountain development through action research, regional knowledge sharing, and capacity building activities. Therefore, the key feature of ICIMOD's work in the next five years will be to implement sustainable interventions by directing its support to ensure that the results of the action research contribute to poverty alleviation and environment conservation, and influence policies, improve practices, and transfer technologies that have a bearing on the lives of our ultimate beneficiaries, poor and marginalised people in the HKH region.

Water in the Himalayas – Friend and Foe

Mats Eriksson, Acting Programme Manager, Integrated Water and Hazard Management, ICIMOD, meriksson@icimod.org

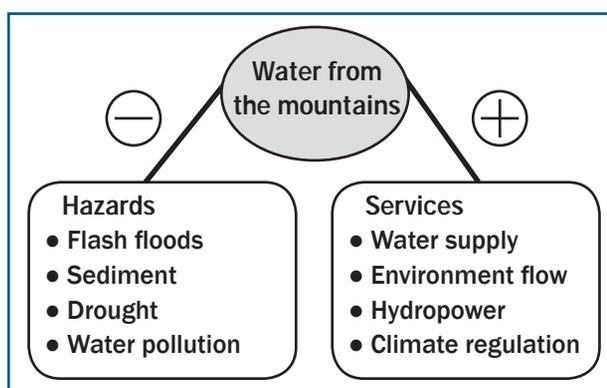


Kamal Banskota

Fishing community in the Chittagong Hill Tracts, Bangladesh

Water provides essential, life sustaining services to people and ecosystems. In the greater Himalayan region, more than 1.3 billion people are estimated to live in the water basins of nine of the world’s largest rivers which originate in the Himalayas, the ‘water tower’ of Asia, and which are dependent on Himalayan waters.

These rivers are the Indus, Ganges, Brahmaputra, Irrawaddy, Salween, Mekong, Yangtze, Yellow, and Tarim (Table 1). In addition, the Amu Darya, which flows into the Aral Sea, originates in the western part of the greater Himalayan region. The water resources in these basins provide services for household purposes, ecosystems, food production, hydropower, inland navigation, and the production of various commodities. In essence, these rivers are the lifelines of the region and its people. However, there are threats to these resources. With its large population and ever increasing demand for water, South Asia is an area where water related stresses are rapidly emerging and, in some areas, may be reaching a crisis point. While water provides life-sustaining services, water also causes the hazards such as flash floods, riverine floods, debris flows, landslides, and droughts. ICIMOD strives to foster the co-management of both the services and hazards provided by water (Figure) in order to maximise the benefits and minimise the risks.



Water – friend and foe

A climate change awakening

The water resources of the Himalayas are sensitive to changes in climatic regimes, and the region’s large (often vulnerable) population, which is dependent on these water resources, is at increasing risk. The year 2007 was a year of great awakening and increased awareness about our rapidly changing climate and the

Table 1: Principal rivers of the Himalayan region

River	River			River Basin			
	Length (km)	Mean discharge (m ³ /s)	Glacier melt in river flow (%)	Area (sq km)	Population (x1000)	Population density	Water per person (m ³ /year)
Indus	2,900	5,533	44.8	1,081,718	178,483	165	978
Ganges	2,507	18,691	9.1	1,016,124	407,466	401	1,447
Brahmaputra	2,948	19,824	12.3	651,335	118,543	182	5,274
Irrawaddy	2,170	13,565	small	413,710	32,683	79	13,089
Salween	2,800	1,494	8.8	271,914	5,982	22	7,876
Mekong	4,600	11,048	6.6	805,604	57,198	71	6,091
Yangtze	6,300	34,000	18.5	1,722,193	368,549	214	2,909
Yellow	5,464	1,365	1.3	944,970	147,415	156	292
Tarim	2,030	146	40.2	1,152,448	8,067	7	571
Total				8,060,016	1,324,800		

possible impact on society, particularly through changes in the water cycle and in natural hazards that might lead to disasters. Politicians and policy and decision makers, as well as the public at large, are becoming more aware of the increased challenges and threats that the HKH region is likely to face as a result of climate change. This has led to an increased interest in understanding how the expected changes in climate will impact on natural resources and society in the Himalayas, particularly on snow and ice and the downstream effects in the great river basins. Therefore, it is of paramount importance to carefully monitor and assess the environmental changes that affect water resources, their quantity, and quality. Politicians and researchers now realise that the Himalayan region is characterised by extremely poor coverage of environmental data; systems for the monitoring of hydrometeorology, snow, and glaciers are poorly developed and not undertaken in a coordinated manner. Yet, the number of people who depend on water resources derived from the Himalayas is very large. Such facts, in combination with strategic

planning, have been underpinning the development of a new strategy for ICIMOD and the decision to design a new strategic programme targeting 'Integrated Water and Hazard Management' (IWHM) (Table 2).

Need for improved knowledge on ice and water

Under the IWHM programme, ICIMOD intends to respond to requests from its member countries to reduce the scientific knowledge gap in relation to what is happening to water resources in the HKH in the light of climate change and changes in society. In doing so, ICIMOD will encourage and facilitate the development of improved 'Monitoring and Assessment of Ice and Water Resources' to provide policy and decision makers, as well as the scientific community, with a better basis for strategic decisions on natural resources management. This improved monitoring and assessment system will have two strategic levels. The first will be monitoring at a regional level, where ICIMOD is well suited to take the lead using remote sensing techniques. Complementing

Table 2: Actions planned under Integrated Water and Hazard Management

Monitoring and Assessment of Ice and Water Resources

- Develop monitoring and assessment schemes for cryosphere and water resources at a regional scale
- Support strengthening of national capacities to monitor and assess cryosphere at national and field-level scales
- Assess functions and services provided by high altitude wetlands
- Establish a regional water-related database

Disaster Risk Reduction and Community Resilience

- Develop and deliver training courses in disaster risk reduction
- Share knowledge in disaster risk reduction
- Assess the impacts of climate change on ecosystems, natural hazards, and human health
- Assess the vulnerability of communities and build their resilience to multihazards

Strengthening Upstream-downstream Linkages for Benefit Sharing and Risk Reduction

- Facilitate regional cooperation for flood disaster mitigation
- Develop flash flood management, forecasting, and early warning systems
- Support integrated water resources management approaches and water governance
- Develop basin-wide scenarios on water availability and demand

this, monitoring systems for ice and water also need to be improved at a national level. This is the responsibility of the regional member countries, but ICIMOD may be instrumental in stimulating such a process and facilitating joint learning and methodology development.

Asia – suffering from natural disasters

Asia is the most disaster prone continent in the world, and ICIMOD's RMCs are infamous for being the most vulnerable countries in the world to natural hazards, particularly those induced by weather and climate, which often lead to disasters and thereby impede socioeconomic development and poverty reduction. ICIMOD has chosen to focus mainly on hazards and disasters related to adverse weather and climate conditions, such as high intense rainfall, regional floods, and flash floods. Water related hazards also include poor water quality, which, as a result of poor sanitation facilities, causes enormous harm to human health and well-being in the region, including thousands of deaths annually.

Disasters do not affect everyone equally. Women, children, the elderly, and the disabled are more vulnerable than others. Particular attention is needed to understand the differences and social inequities in society in order to support appropriate disaster preparedness and mitigation practices. In order to address the risks facing mountain communities and support their desire to better understand the nature of the hazards that might lead to disasters, ICIMOD has outlined a series of activities to be undertaken as part of 'Disaster Risk Reduction and Community Resilience'. Among these activities are the assessment of vulnerability of communities and building their resilience to multi-hazards; assessing the impact of climate change on ecosystems, natural hazards, and human health; delivery of training in disaster risk

reduction; and providing an active and vibrant platform for sharing knowledge and experiences within disaster risk reduction.

Better water management - towards benefit sharing and risk reduction

From a larger, regional, perspective, disasters are causing immense harm to society with tremendous suffering among those individuals who lose family members, livelihoods, and infrastructure. Climate-induced disasters are taking the heaviest toll. Looking at the regional member countries, riverine floods and flash floods account for more than 10,000 deaths annually, not to mention the number of people who lose their livelihoods and economic assets. As mentioned above, ICIMOD believes that hazards and benefits related to water need to be co-managed in order to maximise the benefits and minimise the risks; often reduction of one is met by an increase in the other. Good water governance is repeatedly pinpointed by the international community of water professionals as an activity to be fostered through the adoption of integrated water resources management (IWRM) processes. The IWRM principles encourage the management of water across different sectors, ideally with a holistic view of the need for water in society so that available resources can be distributed and allocated as efficiently as possible, while at the same time safeguarding the needs of society. Applying an IWRM process in a regional river basin presents additional challenges. The nine large river basins in the HKH straddle various cultural, political, and administrative boundaries, and the water flowing in the basins is used for multiple purposes including water supply, irrigation, hydropower, inland navigation, recreation, and spiritual uses, all of which demand a fair share of the precious resource. In its new strategy, ICIMOD intends to contribute to the 'Strengthening of Upstream-Downstream Linkages for Benefit Sharing and Risk Reduction'. Activities to this end include the facilitation of regional cooperation for flood disaster mitigation; the development of flash flood management, forecasting, and early warning systems; the support of IWRM approaches and good water governance; and the development of basin-wide scenarios on water availability and water demand.

Addressing challenges and opportunities in relation to water and hazards in the entire Himalayan region is a formidable task and, of course, ICIMOD has no intention of being the prime solution in this context. However, we believe by working together with national partners in the eight member countries, and by jointly identifying different roles and responsibilities among us, we can take small but important steps towards the achievement of ICIMOD's new vision of a 'mountain population of the greater Himalayas enjoying improved well-being in a sustainable global environment'.

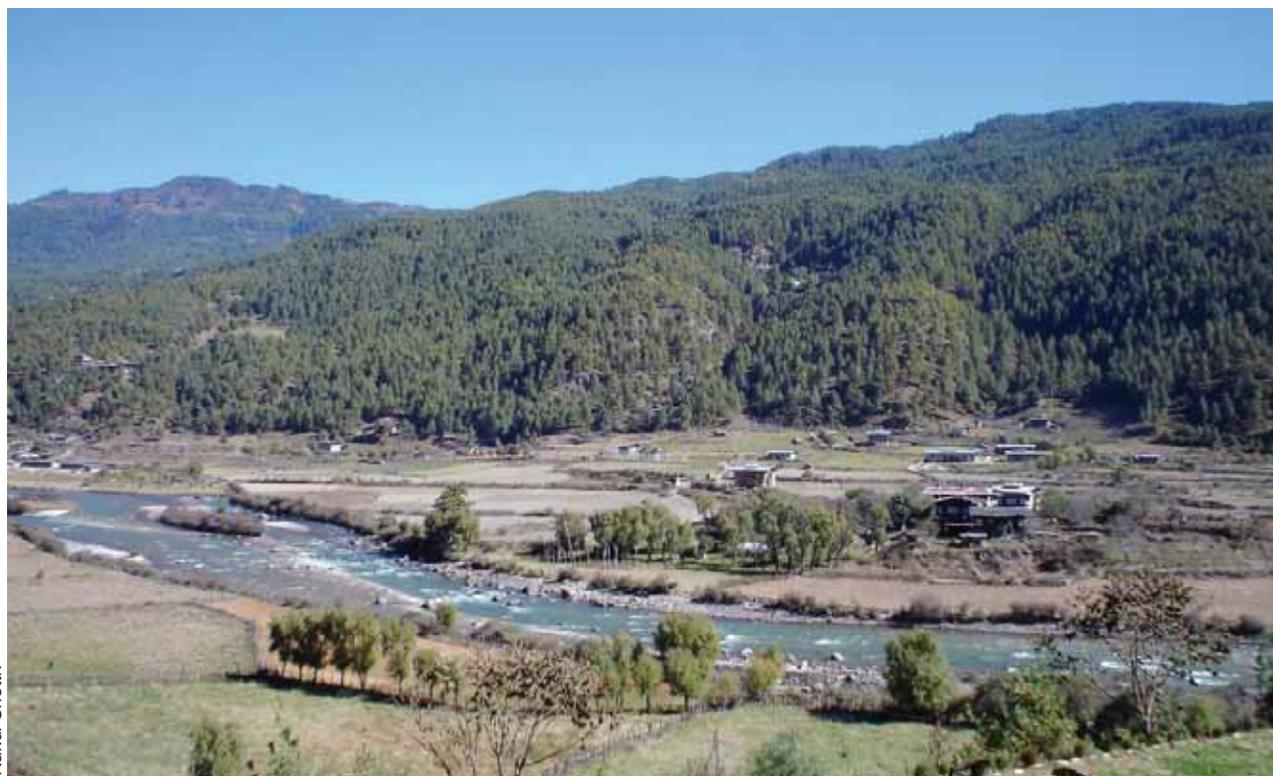


Mats Eriksson

The human face of disaster: a man rebuilt his house in a disaster struck area in Northern Pakistan for lack of choice

Enhancing the Ecosystem Services of the Hindu Kush-Himalayas – Climate Change Challenges and Opportunities

Eklabya Sharma, Programme Manager, Environmental Change and Ecosystem Services, ICIMOD, esharma@icimod.org



Nakul Chettri

Paro valley landscape, Bhutan, showing a variety of ecosystem components

Human ‘well-being’ is a multifaceted quality that encompasses good life, health, good social relations, security, and freedom of choice and action, all of which ultimately depend on sustained ecosystem services.

Ecosystem services can be subdivided into four types: (a) supporting – for example primary production, nutrient cycling, and soil formation; (b) provisioning – for example food, wood, fibre, fuel, and freshwater; (c) regulating – for example climate, flood, disease, and water purification; and (d) cultural – for example aesthetic, spiritual, educational, and recreational (MA 2005). Until recently, ecosystem services were available in sufficient abundance in the Hindu Kush-Himalayan (HKH) region. However, growing demand is leading to rapid degradation and depletion of such services. Ecosystem services need to be enhanced for the well-being of mountain people and downstream beneficiaries, as well as to ensure the sustainable supply of such services to the world and future generations.

Climate change, land use change, and population dynamics are the major drivers of environmental change in the HKH region. These drivers have influenced

ecosystem services and, in many cases, have had a negative impact on the livelihoods of mountain people and increased their economic and environmental vulnerability. Although the sources of these drivers are both internal and external to the region, their effect on human well-being and natural resource availability and use are mutually reinforcing. Mountain people are particularly vulnerable to such changes; equally, although less apparent, these changes impact on entire river basins and even globally.

Challenges arising from climate change

Scientific evidence indicates strongly that global climate change is indeed taking place and will have practical ramifications on local ecosystems (IPCC 2001; IPCC 2007). Studies in Nepal and China have shown that temperatures are rising and at a higher rate in high altitude areas (Chaulagai 2006; Liu and Chen 2000).

The natural ecosystems in the HKH region have undergone dramatic changes over the past 50 years. For the most part, ecosystem services have been degraded. The impacts of this on poor people has been more severe as access to resources has been either reduced or disturbed. As countries develop, the demands people put on their ecosystems change. In the HKH countries, between 47 and 83 per cent of people earn less than \$US 2 per day, and between 17 and 36 per cent earn less than \$US 1 (World Bank 2006). The HKH region is home to some of the poorest people, the majority of whom belong to a diversity of ethnic groups and minorities; their well-being is highly dependent on maintaining and improving ecosystem services. Environmental change also influences the livelihoods of those who live in downstream areas.

The HKH region is home to some of the poorest people, their well-being is highly dependent on maintaining and improving ecosystem services.

Ecosystem services are in jeopardy and action must be taken to ensure they are sustained. However, in the next few decades, even the most stringent mitigation efforts will not avert further impacts of climate change and the alteration of ecosystem services. This makes adaptation essential, particularly in addressing near-term impacts. IPCC (2007) recommends a mix of strategies including mitigation, adaptation, technological development, and research. Sustainable development can contribute to reducing vulnerability to climate change by enhancing adaptive capacity and increasing resilience. Thus responses should focus on adaptation strategies and coping mechanisms.

Most of the HKH range lies at high altitudes and mid-latitudes (30-50°N). These areas are highly sensitive to climate change. Mitigation and adaptation methodologies should respond to cultural and ecological zone specific sensitivities. For example, a recent study shows that afforestation in high altitude and mid-latitude areas contributes to global warming by inducing biophysical effects, while landscapes with grasslands and croplands have a cooling effect (Bala et al. 2007). So, in high altitude and mid-latitude areas of the HKH, rangelands are the natural climax vegetation, and these (rather than forests) should be promoted. Mitigation and adaptation measures have to be supported by scientific and technological findings in customising international know-how and methodologies.

Enhancing ecosystem services in the HKH region

The HKH region encompasses a wide spectrum of ecological zones with a diverse socioeconomic potential. It contains all or part of 4 of the world's 34 biodiversity hotspots (Himalaya, Indo-Burma, Mountains of South-

West China, and Mountains of Central Asia), and contains a unique array of plants and animals of global importance (CI 2005). Furthermore, the glaciers, wetlands, rangelands, and forests of the HKH sustain many rivers, which are the lifeline of downstream provinces and countries. These landscapes provide valuable ecosystem services, not only in the form of the supply and purification of water, but also provisioning, supporting, and regulating services such as plant-based production, soil retention, climate regulation, and carbon sequestration, and as reservoirs of pollinators, natural predators, and others. The well-being of 150 million people within the HKH mountains and a further 1.3 billion people downstream is inextricably linked to the natural resources in the HKH region and the services that the region provides.

The HKH area is globally recognised for the ecosystem services that it provides. Conventions and global agreements such as the Convention on Biological Diversity, the Ramsar Convention on Wetlands, Convention to Combat Desertification, Convention on Migratory Species, Framework Convention on Climate Change, Male Declaration, and Kyoto Protocol all address the issue of sustaining ecosystem services. ICIMOD's regional member countries are party to these conventions and agreements, showing the region's commitment to global agendas.

Many environmental programmes are being implemented in the HKH region which, while adhering to global commitments, should use adaptation and mitigation mechanisms to improve ecosystem services. They include programmes related to participatory forest management, co-management of rangelands, watershed management, protected area management for biodiversity conservation, and the wise use of wetlands and water, as well as programmes employing the river basin approach to conservation and the more recent landscape management approaches. Approximately 35% of the area of the HKH region is under some form of protected management, and this could be used to promote coping mechanisms and adaptive strategies, for example to ensure the conservation of the large number of endemic species found in the region and thus continuation of provision of the tangible and intangible benefits and the services related to biodiversity.

Internationally, the Millennium Ecosystem Assessment (MA) was carried out between 2001 and 2005 to assess the consequences of ecosystem change for human well-being and to establish a scientific basis for actions to enhance the conservation and sustainable use of ecosystems. A conceptual framework for ecosystem services was developed by the MA process (MA 2005) but needs to be adapted for effective use in the HKH region.

There is a need to strengthen the capacities (formal and informal) of people and institutions to address the emerging issues related to ecosystem services in the region. Ecosystem services work demands greater multi-disciplinarity and more integrated approaches. Examples of equi-table payment schemes for eco-system services are scarce in the region and more pilot studies are required. Guidelines, policies, and legal instruments specifically supporting ecosystem services have to be developed to enhance the accrual of benefits to the region.

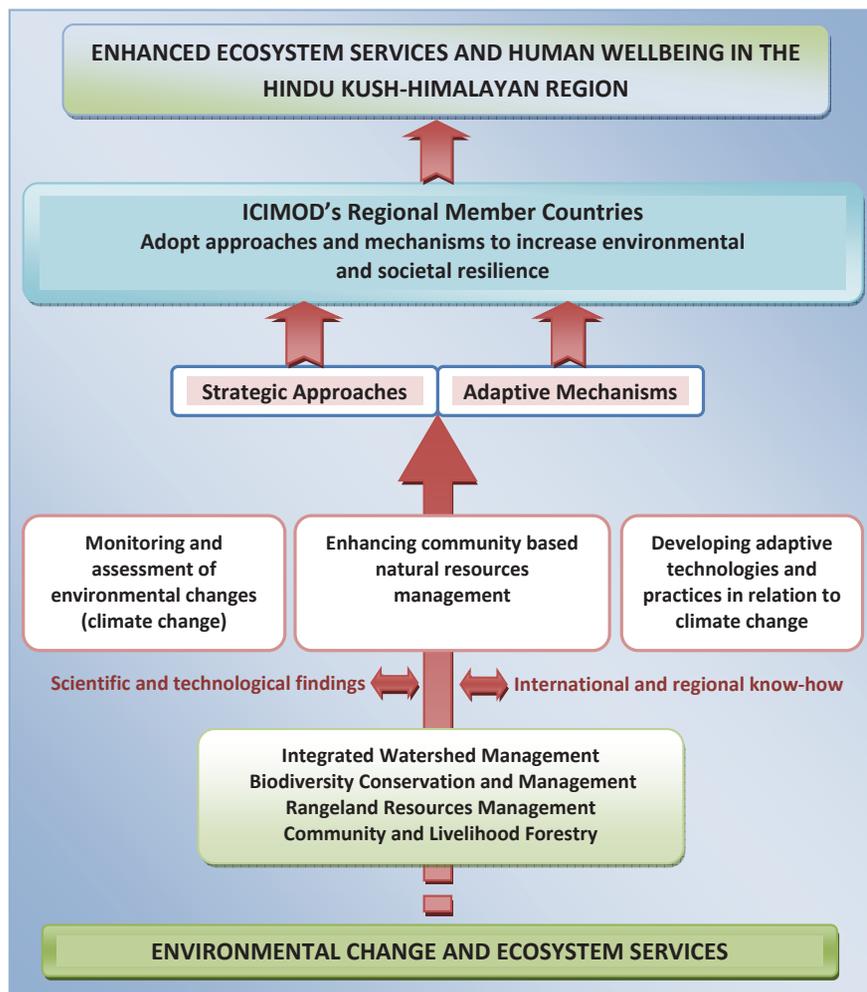
ICIMOD's programme

ICIMOD and its partners realise the urgent need to increase the environmental and societal resilience of the region. ICIMOD's new strategic plan includes a strategic programme on Environmental Change and Ecosystem Services that focuses on issues addressing environmental change, adaptation to climate change, and sustaining ecosystem services.

More specifically the programme intends to

- investigate environmental change through monitoring of ecological and socioeconomic changes, and analyse the consequences of this change for the livelihoods of mountain people and these living downstream;
- find suitable allies to transfer and adapt international know-how and participate in regional collaboration especially on adaptation to the effects of climate change, upstream-downstream relationships, and validation of the supply of ecosystem services, including freshwater and carbon sequestration, for the benefit of communities; conserve and manage biodiversity as our natural heritage and a resource for livelihoods and ecological resilience; and
- work on enhancing ecosystem services by helping to sustain the services that mountain areas provide to the downstream population and the world at large in regulating climatic conditions, and facilitate the development of adaptive technologies, appropriate policies with decision support systems, and innovative payment or compensation mechanisms for ecosystem services.

In operational terms, ICIMOD intends to work on the monitoring and assessment of environmental change, enhancing community-based natural resources



ICIMOD's programme to enhance ecosystem services

management, and adapting to environmental change through programmes on integrated watershed management, biodiversity conservation and management, rangeland resources management, and community and livelihood forestry.

References

- Bala, G.; Caldeira, K.; Wickett, M.; Phillips, T.J.; Lobell, D.B.; Delire, C.; Mirin, A. (2007) 'Combined Climate and Carbon-cycle Effects of Large-scale Deforestation'. In *PNAS*, 104(16):6550-6555
- CI (2005) *Global Biodiversity Hotspot Maps*. Washington DC: Conservation International
- Chaulagai, N.P. (2006) *Impact of Climate Change on Water Resources of Nepal: the Physical and Socioeconomic Dimensions*, PhD Dissertation. Flensburg (Germany): Flensburg University
- Liu, X.; Chen, B. (2000) 'Climatic Warming in the Tibetan Plateau during the Recent Decades'. In *International Journal of Climatology*, 20:1729-1742
- IPCC (2001) *Climate Change: Synthesis Report. A Contribution of Working Groups I, II and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge and New York: Cambridge University Press
- IPCC (2007) *IPCC Summary for Policymakers: Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability, IPCC WGII Fourth Assessment Report*. Cambridge and New York: Cambridge University Press
- MA (2005) *Millennium Ecosystem Assessment: Ecosystems and Human Well-Being: Synthesis*. Washington: Island Press
- World Bank (2006) *World Development Indicators*. Washington: International Bank for Reconstruction and Development/The World Bank

Sustainable Livelihoods and Poverty Reduction

Michael Kollmair, Programme Manager, Sustainable Livelihoods and Poverty Reduction, ICIMOD, mkollmair@icimod.org



Kamal Banskota

Typical household in the Daro hills, North East India

Adapting to a rapidly changing world is a challenge for people worldwide, but particularly for the people living in the marginalised mountain areas of the Hindu Kush-Himalayas (HKH). Mountain people, with their highly diversified livelihoods, are well placed to face these changes, but they are also exposed to additional challenges due to the inherent fragility and inaccessibility of mountain areas.

People who have secure livelihoods and enough options and opportunities to cope with changes are obviously better prepared to adapt to global climatic and socioeconomic change. Poverty is simply the absence of such (livelihood) opportunities, be they constraints on an economic or a social level. Generating options for sustainable livelihoods and reducing poverty is, therefore, the most effective way to adapt to the emerging changes triggered by global change.

ICIMOD's programme

ICIMOD, with its Sustainable Livelihoods and Poverty Reduction (SLPR) programme, will concentrate on developing and promoting options for the improved and sustainable livelihoods of mountain people in the HKH; options that do not threaten the environment in the mountains or the adjoining lowlands. Within the broader

framework of sustainable mountain development and poverty reduction, the SLPR strategic programme focuses on supporting the development of sustainable livelihood options through innovative rural income generation strategies and equitable stakeholder arrangements in order to promote the increased resilience that mountain people will need to face the challenges posed by global change.

ICIMOD's regional member countries have all developed strategies for poverty reduction under the framework of the MDGs (Millennium Development Goals) and various other plans for developing sustainable livelihoods. However, ICIMOD's extensive experience with mountain-related issues has shown that these policies need to be fine-tuned and placed within the specific context of mountain perspectives and imperatives to be

Drivers of Change for Livelihoods in the Himalayas

Mountain people in the HKH are increasingly exposed to growing physical, social, and economic threats. In the short to medium-term, three main and closely interrelated drivers of change can be identified which affect future livelihoods and must be considered when planning strategic interventions:

1. **Globalisation:** Increasing economic and social globalisation has implications for growing societal and cultural interdependence and connectivity, including an increasingly integrated market for products, services, and the workforce, which impacts on the livelihood options of mountain people and their expectations for livelihood outcomes.
2. **Population growth and migration:** Shifting regional population dynamics show slightly reduced population growth rates and strong rural-urban migration (both permanent and seasonal), leading to labour scarcity in mountain areas and a pronounced feminisation of labour in rural areas.
3. **Environmental change:** Environmental change induced by climate change is causing weather extremes, such as longer droughts, more frequent floods, erratic rainfall, higher temperatures, and milder winters, all of which affect the availability of natural resources and impact on agricultural systems.

relevant and to contribute effectively to sustainable development in mountain areas. Such mountain specific pro-poor strategies should be aimed at empowering mountain people to meet the various challenges and temptations posed by globalisation and to be able to profit from them without compromising their own local livelihoods and values, or the environment.

ICIMOD will promote strategies, options, and opportunities specifically aimed at the rural poor in the HKH by closely monitoring the poverty situation and its drivers, conducting in-depth analyses of potentials, and promoting concrete solutions aimed at reducing poverty and vulnerability in an equitable manner. The promotion of niche products, value-added services, and the innovative and equitable use of emerging potentials are at the centre of our planned activities. These activities will result in the promotion of tested technologies, sustainable and equitable institutional arrangements, and improved policy options.

Mountain opportunities

The SLPR programme will concentrate on opportunities arising from mountain-specific conditions and based on the high diversity of mountains, such as on-farm and off-farm niche products and options for value addition, as well as on the outcomes of ecotourism and migration. Particular attention will be given to the interdependence between upstream and downstream livelihoods, rural-

Sustainable Livelihoods and Poverty Reduction Programme

The SLPR programme will pursue the following four outcomes:

1. Empowered mountain communities, especially poor people and women, through enhanced livelihood options and the support of equitable institutional arrangements
2. Enhanced and diversified income opportunities for mountain people created by tested technical and institutional innovations
3. Improved well-being of mountain people through the establishment of efficient and equitable market linkages for mountain niche products and services
4. Improved sustainable livelihoods, increased equity, and reduced poverty for mountain people facilitated by the promotion of evidence-based mountain policies

urban linkages, value chains, and market dimensions. Strong emphasis will be placed on the unique livelihood opportunities afforded by the region's rich natural and cultural diversity and associated traditional knowledge. Impediments that stand in the way of mountain people reaping the full benefit of their unique environment will be addressed. This may include making the medicinal plant market more transparent, supporting the use of social and ecological branding for niche products, and making the best use of resources to improve livelihoods, including the validation of equitable sharing of environmental services generated by the (non) use of resources. Overall, aspects of equity will be considered in all suggested interventions to avoid the further feminisation of agriculture-based labour and the increased marginalisation of minority groups.

Special focus areas

Women and men both play essential roles in sustainable mountain development. However, the contribution of women is not fully acknowledged and they are still marginalised in overall development initiatives. This lack of recognition translates into unequal access to resources, financial services, assets, rights, legal protection, information, health services, and other social services, and ultimately prevents them from participating effectively in the decision making that shapes economic and social development initiatives and from benefiting equally from these initiatives. Through its Gender Mainstreaming and Governance Unit, SLPR will work in close collaboration with ICIMOD's other major programmes to ensure that all interventions and activities are sensitive to gender issues and support good governance practices from the local to national level.

The World Bank development indicators show that in 2006 between 47 and 83 per cent of the population in

Multiple Livelihoods in the Himalayas

Nima Limbu is 26 years old and living in a mid-altitude village in the central Himalayas. She has been married for nine years and has two children aged seven and five. For the last seven years, her husband has worked as a construction worker in Abu Dhabi. During this time she has seen him only twice, when he came home for holidays. He is able to send some money home at irregular intervals and calls her at least once a month as their neighbour has a telephone line. She is member of a women's group that provides micro-credit, which is supported by a national NGO. She also represents the household at community forest user group meetings to ensure access to firewood, fetches water from the nearby well, pays the children's school fees, and maintains social obligations with relatives and neighbours. Maintaining their farm's agricultural production is very difficult. Besides her household chores, she works a lot on their farm. As agricultural labour is hard to find and expensive, she decided to leave the distant and less productive fields fallow. However, distant family members and neighbours still have to help her during the planting and cropping season. With some savings and a loan from her women's group, she was able to buy another cow and she sells the milk to the nearby collection centre. This small but stable income is used to pay the additional schooling costs of her children. She is dreaming of her husband coming back with enough money to build a new house and of having enough money to send their children to a good school in the capital.

HKH countries lived in poverty (and between 17 and 36 per cent lived in absolute poverty). However, specific documentation and analysis of the poverty dimensions in the mountains, where the problem is even more pronounced, is missing. Through its Economic Analysis Unit, ICIMOD will monitor and analyse the poverty situation and its main drivers, and develop data that is

relevant to designing policies that will improve the livelihoods of mountain people. The Economic Analysis Unit will also serve as a focal point for economic competence in relation to a variety of crosscutting issues related to the valuation of environmental services, value chain analysis, poverty analysis, policies, and others.

HIMALAYAN HONEYBEES

Living with Honeybees – A Decade of Enrichment of Thought and Understanding

Farooq Ahmad, Coordinator, Beekeeping Project, ICIMOD, fahmad@icimod.org

Uma Partap, Research Officer, Pollination, ICIMOD, upartap@icimod.org

Indigenous honeybees occupy a major place in the apicultural landscape of the Hindu Kush-Himalayan (HKH) region. The region is home to five different species of indigenous honeybees, *Apis cerana*, *Apis dorsata*, *Apis florea*, *Apis laboriosa*, and *Apis andreniformis*. Bees play an important role in the pollination of various crops and natural flora and enhance floral diversity and agricultural productivity.

The HKH region produces over 36,000 tonnes of honey per year from over four million colonies and nests of indigenous and exotic honeybees (Ahmad et al. 2007). Most of the bee farmers in the HKH region fall into the category of the poorest of the poor and generally live in less accessible areas, managing domesticated bee species in backyard gardens, as well as conserving and safeguarding wild bees to harvest small quantities of honey.

Due to habitat changes, the ongoing expansion of monoculture, the extensive use of pesticides and other agro chemicals, and competition from the exotic *Apis mellifera*, the number of indigenous honeybees has declined significantly over time. Other factors, such as

insufficient focus by national institutions and their lack of capacity, and the changing economic and social landscape, have further aggravated this decline in population across large parts of the HKH region. This situation prompted ICIMOD to conduct research to better understand indigenous honeybees and their role in the livelihoods of the poor, pollination, and productivity, and the extent of the damage caused by exotic bee species to local populations. Research was needed to increase the productivity of the Asian hive bee *Apis cerana* through management, selection, and queen rearing. Given the wide distribution of *Apis cerana* across the Himalayas, there was an urgent need to facilitate and strengthen the networks of beekeeping organisations and help communities to learn about



Satananda Upadhyaya

Group of women from Mugu, Nepal with bee veils

beekeeping and to pass on the knowledge generated through research. In addition, to promote modern beekeeping efforts, the potential for marketing and business development of bee products had to be explored. To do this, a holistic and integrated Indigenous Honeybee Programme was developed based on action research with the aim of conserving indigenous bee populations and supporting income generation in mountain communities through the development of bee enterprises. This undertaking, implemented in phases, has been made possible through the generous support of the Government of Austria.

A strategy was developed to bring together individuals and organisations (local, regional, and international, and including government departments and research, and academic, and training institutions) to focus on the dual goals of poverty reduction and biodiversity conservation (ICIMOD 2007). On a strategic level, dialogue about the promotion and development of indigenous honeybees was started to enhance knowledge, promote relevance, and disseminate information. On a tactical level, a core of knowledge partners including universities, the Food and Agriculture Organization (FAO), the US State Department, and regional research institutions were networked to promote the craft of apiculture and pollination management. Training curricula were developed in collaboration with knowledge partners for different levels of stakeholders. At the village level, a community-

based approach was adopted to support farming communities at project sites in India, Nepal, and Pakistan so that they could refresh their understanding and increase the productivity of local bee strains. Honey hunting communities in Nepal were encouraged to conserve the (indigenous) bees while harvesting honey and a balanced approach to honey hunting was promulgated. Innovative ideas, like bee watch tourism, were promoted to augment the income of the people living in honey hunting areas. Special care was taken to help communities understand that the development model used is endogenous, requiring minimal exogenous inputs, to enable them to take ownership and feel empowered. Arrangements were made to mobilise the resources of partners to enhance the effectiveness and efficiency of the programme.

This article highlights some of the successful outcomes of the indigenous honeybee programme, which started as a small research initiative and evolved through different phases to include basic research, farmer participatory action research, capacity building, and scaling up through partnership development with rural development organisations. The programme opened up vistas of knowledge and opportunity in the following areas: conservation and promotion of indigenous honeybees, livelihood improvement and poverty reduction, capacity building and skills development, pollination and ecoservices, and markets and business development.



Satananda Upadhaya

Colony inspection – *Apis cerana* comb on top bar hive

Achievements

Conservation and promotion of indigenous honeybees

The endogenous approach to beekeeping development used by the ICIMOD programme, with limited exogenous inputs, helped to mobilise local resources, encouraged innovation, and facilitated a positive attitude to the conservation and promotion of indigenous bees. The approach included farmer-managed selection and multiplication of *Apis cerana*, which led to an increase in honey productivity from a mere two kilograms per hive per year to an average of six kilograms at project sites, and a maximum of 13 kilograms at one site (Ahmad et al. 2008). The adoption of better management practices by farmers resulted in a reduction in absconding, greater resistance to disease and parasites, and an increase in colony numbers and colony strength. Studies were also conducted on wild bees like *Apis laboriosa*, which nests on cliff faces and produces large quantities of honey for honey hunting communities, as well as providing crucial pollination services to high mountain crops and flora. The *Apis laboriosa* species was found to be in decline (Underwood 1986) and a mitigation process was

Beekeeping Entrepreneur

Twenty year-old beekeeper, Mr Abdul Shakur, was trained in beekeeping by the Bangladesh Institute of Apiculture (BIA) in Bandarban district. He started beekeeping with one colony and multiplied it to make four colonies of *Apis cerana* in his backyard garden. He earned US \$200 in one year selling honey at the rate of US \$15 per kilogram. He used this money to buy a wireless communication system and established a communication centre, which is now earning him US \$40 per month. He uses the income to buy school books and clothes for his brother and sister.

initiated to stabilise populations for the sake of biodiversity and to protect livelihoods. Honey hunters were involved in the programme to help reverse the decline. Through training, capacity building, and awareness raising, conservation efforts like selective harvesting and bee watch tourism were adopted by communities. Annual data for the last eight years, covering more than 30 cliff sites, shows that populations are now stabilising (Ahmad et al. 2006).

Livelihood improvement and contribution to poverty reduction

Bees contribute enormously to income generation through bee products and pollination services. It has been estimated that through pollination services to

agriculture and surrounding flora, beekeeping helps communities to generate income equivalent to 14 times the investment required (Free 1993). ICIMOD's beekeeping interventions contributed to the ultimate goal of livelihood improvement by promoting and facilitating organisational support for beekeeping and honey hunting communities so that they could organise themselves to promote and develop their beekeeping businesses. Our studies show that beekeeping with *Apis cerana* helps farmers in remote areas of Nepal to generate around US \$45 per year on average through the sale of honey from backyard bee colonies (Gurung et al. 2003). Further to this, one bee colony fetches over US \$30 per year in rent for pollination services in the apple growing areas of Himachal Pradesh, India (Partap and Partap 2002). This is possible due to the interventions implemented by ICIMOD.

Capacity building and awareness raising

Capacity building efforts by the programme were focused on partnership development, networking, curriculum development, and training. ICIMOD working together with 27 partner organisations and networks, trained more than 7000 individuals (30% of them women) using mostly practical learning tools and field testing. To ensure sustainability at a higher level, a special programme was launched with the help of universities to train young scientists and support research in bees and pollination. A website (www.bees4livelihood.icimod.org) was developed and made accessible to partners and other stakeholders to strengthen communication and share information. All these activities helped to increase the number of honeybee colonies in moveable frame hives in different project sites. In Jumla, top bar hives and wax processing was introduced, and there are now over 400 *Apis cerana* colonies in top bar hives. Wax processing emerged as a new business opportunity and

Jumla beekeepers, who used to throw away their wax, are now processing it into a variety of products including skin creams and balms (ICIMOD 2005). A core group of trainers in the art of wax processing was gathered together in Nepal. In Kaski, a number of new bee-related businesses have emerged, such as hive carpentry, nucs making, and queen production, resulting in an increase in the number of bee colonies by more than 50 times. In one site in Nepal (Alital), more than 80 per cent of trainees adopted beekeeping in moveable frame hives (Gurung et al. 2003).

To raise awareness and expand the horizon of generated knowledge, alliances were made with electronic and print media, including the BBC and National Geographic. This has been an important boost to the programme and has helped to convince stakeholders about the importance of indigenous bees.

Pollination and ecoservices

Pollination and ecoservices were always an important theme of the indigenous bee programme. A substantial amount of knowledge and information was generated and disseminated by the programme in collaboration with regional and international partners including initiating, conducting, and publishing of 12 case studies. Books, training manuals in different regional languages, videos, and policy papers were produced to highlight the issues and raise awareness about the value of honeybees to agriculture and biodiversity (Partap 2003; Partap and Partap 2001, 2002; ICIMOD 2005, 2007). Special efforts were made to develop knowledge and

programme partnerships with major international and regional initiatives. Significant contributions were made to a policy and practice manual on pollinators and pollination edited by Connal Eardley and his co-workers in 2006 (Eardley et al. 2006), which addresses the issues in a holistic way and provides solutions at a tactical level. Programme partners in the region were supported to become part of a GEF-FAO led global initiative on the conservation and sustainable use of pollinators through the ecosystem approach. This has given the programme a strategic boost in the eyes of partners and concerned stakeholders. Following this, an awareness raising strategy paper was developed to promote pollination and pollinator conservation for FAO, which helped to disseminate information.

The idea of a managed pollination process, which was not even in the mainstream of extension messages when the programme started, is now being taken care of by farming associations and local governments in ICIMOD project areas. This has led to the development of pollination enterprises in cash crop farming areas. In Himachal Pradesh alone, the demand for bees for pollination exceeded 200,000 colonies, which is difficult to provide with the existing beekeeping infrastructure (Partap and Partap 2002).

Markets and business development

So far, the focus of many business development experts in the region has been limited to the marketing of honey. Changing this mind set was a challenge, as carpentry products like hives, other bee equipment, queens,



Satananda Upadhaya

Helping farmers to make beeswax products during a training programme

Frame hives made locally in Kaski, Nepal

Three small carpentry workshops were established by trainees of the beekeeping project. These workshops not only cater to the demand of beekeepers, but also provide services to home builders. Before the project intervention, farmers had to transport frame hives from Chitwan or Kathmandu. The carpentry workshops have produced 2000 frame hives in Armala and Ghachowk villages and sold over 1500 hives locally, worth US \$20,000.

colonies, nucs, pollinator colonies, and wax products are also major marketable commodities. To address this issue, ICIMOD's partners adopted all the components of bee business development in their business plans (ICIMOD 2005, 2007). Indigenous bees produce smaller quantities of honey and the supply line is scattered, so it is important to develop a business development plan leading to value chain analysis for small beekeepers, producers, and handlers. Although this has not yet materialised, the efforts made so far are on track to achieve the business development goals. Products other than honey are attracting the attention of markets and are being supplied by handlers to consumers, leading to the establishment of micro enterprises by farmers in remote areas. Wax handlers in Nepal have been linked to cosmetic manufacturers in Thailand, which is making productive use of beeswax and bringing income to producers (ICIMOD 2007). To rationalise planning for business development, a special market survey was carried out to better understand existing honey flow and marketing mechanisms, markets, pricing mechanisms, and the niche value of indigenous honey. To further strengthen the argument, honey from different sources was analysed and its properties were documented. This exercise led to a dialogue and discussion on the weaknesses of the Codex Alimentarius and the directives of the European Commission on honey, which discriminate against honey produced by honeybees other than *Apis mellifera*.

Future prospects

Notwithstanding the achievements, there is much still to be done in terms of institutionalising the successes of the programme and disseminating the results for wider impact across the HKH region. Capacity building will continue to be an integral part of any future programme on honeybees. In addition, increasing honey production to meet the growing demand for organic honey in order to reduce poverty among the poor honey producing communities of the HKH and to counteract the reduction in the efficiency of pollination services requires new thinking and approaches to efficiently utilise and develop available honeybee resources. The impact of climate change is another important issue that requires attention. A better understanding of the changing

scenario will enable ICIMOD and its regional partners to take the opportunity to expand the programme and address the emerging needs of beekeeping development. The following areas of intervention and activities are being planned in line with ICIMOD's new Medium Term Action Plan (2008-2012):

- Curriculum development for universities and technical/vocational institutions and the exchange of information and experiences
- Inputs for honey trade policy and value chains for bee products and services
- Networking and scaling up of bee programmes in participating countries
- Pollination and its integration with horticulture, and support to the GEF-FAO global programme on pollinators
- Analysis of the role of honeybees in providing necessary pollination services to mountain ecosystems and agriculture in the context of poverty and livelihoods
- Technical assistance to bee programmes in HKH countries

References

- Ahmad, F.; Joshi, S.R.; Gurung, M.B. (2003) *The Himalayan Cliff Bee Apis laboriosa and the Honey Hunters of Kaski*. Kathmandu: ICIMOD
- Ahmad, F.; Partap, U.; Gurung, M.B. (2007) *Concept Note on the Future Dimensions of the Austrian Government Supported 'Honeybees in the Himalayas' Programme of ICIMOD*. Kathmandu: ICIMOD
- Ahmad, F.; Partap, U.; Gurung, M.B.; Joshi, S.R. (in preparation) *Addressing Poverty and Managing Sustainability through Beekeeping*. Kathmandu: ICIMOD
- Eardley, C.; Roth, D.; Clarke, J.; Buchmann, S.; Gemmill, B. (2006) *Pollinators and Pollination: A Resource Book for Policy and Practice*. Pretoria: African Pollinator Initiative
- Free, J.B. (1993) *Insect Pollination of Crops*. London: Academic Press
- Gurung, M.B.; Ahmad, F.; Joshi, S.R.; Bhatta, C.R. (2003) 'The Value of *Apis cerana* Beekeeping for Mountain Farmers in Nepal'. In *Bees for Development Journal*, 69:13
- ICIMOD (2005) *Indigenous Honeybees of the Himalayas: A Community-based Approach to Conserving Biodiversity and Increasing Agricultural Productivity*. Terminal Report submitted to the Austrian Coordination Office of the Austrian Development Agency, Thimphu. Kathmandu: ICIMOD
- ICIMOD (2007) *Honeybees of the Himalayas: Promoting Partnerships with Rural Development Organizations in the Region*. Terminal Report submitted to the Austrian Coordination Office of the Austrian Development Agency, Thimphu. Kathmandu: ICIMOD
- Partap, U. (2003) 'Improving Agricultural Productivity and Livelihoods through Pollination: Some Issues and Challenges'. In Waliyar, F.; Collette, L.; Kenmore, P.E. (eds) *Beyond the Gene Horizon*, pp 24-26. Patancheru (India): ICRISAT and Rome: FAO
- Partap, U.; Partap T. (2001) 'Declining Apple Production and Worried Himalayan Farmers: Promotion of Honeybees for Pollination'. In *Issues in Mountain Development No. 1/2001*. Kathmandu: ICIMOD
- Partap, U.; Partap T. (2002) *Warning Signals from the Apple Valleys of the Hindu Kush-Himalayas: Productivity Concerns and Pollination Problems*. Kathmandu: ICIMOD
- Underwood, B.A. (1986) *The Natural History of Apis laboriosa Smith in Nepal*, MS Thesis. Ithaca, New York: Cornell University

Kabul University

www.ku.edu.af

Kabul University, located in Kabul, Afghanistan, is a public university, which provides higher education services to the citizens of Kabul and other provinces in Afghanistan. It was founded in 1931 and officially inaugurated in 1932 when it opened its doors for the first time to students from across the country.

The university produces almost 50% of the higher education graduates in Afghanistan. It currently has 509 lecturers and around 12,000 students, of whom 2700 are women. The university is still recovering from the long period of war and chaos in the country. The main building was rebuilt about 500 metres from the old one, following almost the same design. Students pursue studies in the fields of agriculture, economics, pharmacy, law, literature, science, engineering, and fine arts. There are 14 faculties, 2 dormitories, a library, a gymnasium, a cafeteria, and 7 auditoriums.

Almost 20 years ago, Kabul University was the best public university in Afghanistan due to its qualified lecturers, employees, good physical infrastructure, and internationally updated curriculum. During the war, most of the lecturers and employees migrated to other countries. As a result, curricula have not been updated for many years and the university's physical infrastructure has been damaged. Student dropout rates increased because of lack of security, poor quality, and poverty.

After the Taliban regime, the interim and transitional government was unable to pay enough attention to higher education because of other urgent issues that had to be managed. Since the elections and the announcement of the new cabinet, the government has started focusing on higher education and has committed itself to reform Kabul University.

The University, has assessed the entire situation in terms of human capacity, physical infrastructure, and curricula. The assessment report shows a really challenging situation, where lectures are taking

place and students are learning and studying with almost no basic facilities. The human capacity, physical infrastructure, and curricula of Kabul University need investment and development.

Kabul University has completed its vision, mission, and action plan to achieve its goals and objectives. It has designed several development projects to implement the planning, development, and contracting of projects that will take at least six months.

Kabul University is a member of the Himalayan University Consortium (HUC), which was formed in March 2007 with the aim of promoting the development of a mountain specific curriculum and collaborative training and research. Under the umbrella of the HUC, a project proposal has been prepared to build the human capacity of Kabul University and other Afghan institutes. This project, which plans to provide scholarships and training, was confirmed at the end of the second HUC meeting in February 2008. ICIMOD took the lead in the project formulation and will have a coordinating role in its implementation, while funding is from the International Development Research Centre (IDRC). Under the project, Afghan University staff and other officials will undergo study and training, largely provided by other HUC members.



Dechenla Sherpa

Tomorrow's student, young Afghani boys

Poverty Alleviation Fund: Working to end extreme poverty in Nepal

info@pafnepal.org.np

The Poverty Alleviation Fund (PAF) was established in 2004 to bring excluded communities into mainstream development by placing poor and disadvantaged groups in the driving seat.

Objectives, principles, and strategy

PAF is working to reduce poverty to 10 percent by 2020 pursuant to the long-term goal of the Government of Nepal, and to reduce poverty by half by the year 2015, as per the Millennium Development Goals.

PAF is guided by the following five principles in all its activities: targeted at the poor (antyodaya), social inclusion (samabeshi), transparency (pardarshita), demand driven (mang anusa), direct payment (pratakchhya bhuktani). It uses the following strategies to meet its objectives:

- Enable the poor, through social mobilisation and capacity building, to organise and obtain quality basic services in a cost effective and sustainable manner with direct involvement in identification, planning, designing, executing, managing, operating, and maintaining schemes/programmes.

- Use partner organisations to help facilitate poor vulnerable people and their community groups or organisations to implement programme components.
- Build partnerships with various organisations working in its areas of operation at the village, district, and national levels in order to ensure holistic development interventions, which have a discernible impact on poverty reduction, and the scaling up of programmes.
- Build PAF as an independent, autonomous, and professional organisation, which acts as a facilitator, sensitive to the needs and aspirations of the poor, with a lean structure of core professional staff.

Programme components and Implementation process

PAF's four major programme components are Social Mobilisation, Income Generation, Small Community Infrastructure Development, and Capacity Building. The social inclusion strategy provides that target beneficiaries are poor women, dalits, janajatis, and other poor and disadvantaged groups.

PAF now covers all 25 of the districts categorised as the most deprived by the CBS/National Planning Commission. It eventually plans to cover all 75 districts in Nepal. PAF is also implementing innovative programmes and other initiatives to reach the poor, in other districts. The total expenditure for the first phase to 31 December 2007 was about US \$36 million. The World Bank recently approved US \$100 million to be spent over four years to expand the programme to all districts in the second phase. In addition, the UN International Fund for Agriculture Development (IFAD) has agreed to finance US \$4 million for capacity building.

Achievements

In only three and a half years, PAF has helped to organise communities into about 6,000 community organisations to implement an equal number of community projects for income generation and infrastructure. By mid-December 2007, a total of 187,628 households had benefited from PAF programmes, of which 41 per cent were Dalits, 29 per cent were Janajatis, and 67 per cent were woman. PAF Nepal is one of ICIMOD's new partners under the new strategic programme and will be working with ICIMOD on livelihoods and poverty reduction.

Poverty Alleviation Fund, Nepal (PAF, Nepal)
Gyaneshwor, Kathmandu, P.O. Box 9985, Kathmandu, Nepal
Tel: +977-1-4410041, Fax: +977-1-4415845, info@pafnepal.org.np



PAF Nepal



PAF Nepal

Commercial vegetable farming in Hinnikadh village undertaken with financial assistance and training from PAF; villagers were helped to construct a water harvesting tank for irrigation.



Centre News

Special Highlights

38th Meeting of the ICIMOD Board of Governors Approves New Five-year Strategy

Meetings of the ICIMOD Board of Governors (BoG), ICIMOD Support Group, BoG Finance Committee, BoG Programme Advisory Committee, and ICIMOD Foundation Committee were held in Dhulikhel, near Kathmandu, from 26 to 28 November 2007. The meetings were attended by the regional board members, the independent board members, and representatives of ICIMOD sponsors, as well as special invitees Mr Muhammad Ismail Qureshi, Secretary, Ministry of Water and Power, Pakistan, and Dasho Sangay Thinley, Former Secretary of the Ministry of Agriculture, Bhutan (both former board members). The new Chair of the Board of Governors for 2008 was Mr Md. Abdus Sabur (now deceased), Secretary, Ministry of Chittagong Hill Tracts Affairs, Bangladesh, taking over from the outgoing Chair HE Eng Ghulam Mostafa Jawad from Afghanistan.

governance, and economics, working together on programmes designed to help people adapt to climate change and improve their livelihoods, while protecting the environment. Details of the Strategic Framework and Plan are discussed elsewhere in this newsletter.

The new Strategic Framework was developed against a background of increasing challenges for the people of the Hindu Kush-Himalayan region. Globalisation and climate change have been so intense that coping mechanisms are losing their efficacy. The new strategic programmes were designed following consultations with governments and organisations in the Centre's eight regional member countries. The discussions were spearheaded by ICIMOD staff and involved input from

The main focus of the meeting was the new Strategic Framework and the Medium-Term Action Plan for 2008-2012, which were approved. The new strategy envisions three strategic programmes – Integrated Water and Hazard Management, Environmental Change and Ecosystem Services, and Sustainable Livelihoods and Poverty Reduction – supported by a strong knowledge management group and specialists in gender, equity,



Meeting participants visiting Gaukhureswor Community Forest

Madhav Dhakal

the Programme Advisory Committee, the ICIMOD Support Group, and the Board of Governors. Through improved understanding of the potential impacts of climate change, people and governments can be helped to avoid the worst risks of disasters, to plan for water management, to use better the opportunities open to them, and to adapt to the impacts of climate change. The new strategic programmes build on ICIMOD's more than two decades of experience in the Hindu Kush-Himalayan region and strong network of partners, and will emphasise the interdisciplinary and regional nature of the challenges that face mountain people.

ICIMOD was delighted by the very positive response and strong commitment shown by the regional member countries to the new agenda. ICIMOD's sponsors, including many long-term donors, expressed their strong support for the new plans, and generosity and

encouragement for 2008. The planned budget for the coming year is US\$ 10.7 million, compared to US\$ 6.3 in the previous year.

ICIMOD's new Director General, Dr Andreas Schild (in office since April 2007) described the programme as challenging and ambitious, as well as an exciting opportunity to make a difference for the people of the region. He said that the new programme will involve many changes in the way that ICIMOD works, both within the Centre and outside, and praised the staff for their commitment, enthusiasm, and hard work in developing the strategy and plan.

The next regular Board Meeting will be held in Kathmandu to coincide with ICIMOD's 25th Anniversary on 5 December 2008.

A. Beatrice Murray, bmurray@icimod.org

Medium-Term Action Plan (MTAP) 2008-2012

Under its new strategy, ICIMOD's mission is to 'enable and facilitate the equitable and sustainable well-being of the people of the Hindu Kush-Himalayas supporting sustainable mountain development through active regional cooperation'. This mission and the overall strategy, as well the directives of the Board of Governors arising from the external review in 2006, guided the process of planning and designing ICIMOD's Medium Term Action Plan (MTAP) for 2008-2012.

MTAP planning process

The medium-term planning process started with national consultations in all eight regional member countries (RMCs), followed by a regional consultation in Kathmandu. These consultations were attended by the concerned RMCs, ICIMOD board members, and senior

policy makers. They made the following recommendations:

- ICIMOD should scale up its pilot projects nationally and regionally through its strong relationships with, and commitment from, its RMC partners.
- ICIMOD needs to build partnerships and realign itself with other centres of excellence in its RMCs.
- ICIMOD should closely engage with national strategic partners from the planning phase onwards to avoid duplication.
- Climate change related impacts, especially water shortages and the degradation of environmental services, are major issues for research.
- High value products, their marketing and value addition, and influencing value chains are of high priority.

The main objective of MTAP II is to convert ICIMOD's new strategy into a programmatic framework in the form of a detailed five-year plan and annual plans. As a first step, three strategic programmes were defined: Integrated Water and Hazards Management, Environmental Change and Ecosystem Services, and Sustainable Livelihoods and Poverty Reduction. The second task was to convert the strategic goals into strategic outcomes under each programme. The three strategic programmes have been



organised into nine action areas, each headed by an action area team leader. All interventions in the regional member countries will be at the action area level, while the strategic programmes originate at headquarters.

The Integrated Knowledge Management (IKM) group will consolidate and package information and knowledge resources and make these available to both ICIMOD and RMC-based programmes. IKM will work closely with the three strategic programmes, integrating their activities to support new innovation and co-development strategies in KM. Remote sensing, GIS, and geo-ICT tools and technologies will be developed to help share information across the region. ICIMOD will be further developed as a geo-information and knowledge resource centre. ICIMOD publications will be more targeted and e-publications will increase.

Scaling up activities in the RMCs

ICIMOD will promote the scaling up of programmes through different action areas. This will also be a major focus of the Human and Institutional Capacity Development unit. Activities related to the Himalayan University Consortium (HUC) will be linked to human capacity development activities, and will focus initially on development of the university faculty in Afghanistan. Partnership creation and development will be given a strategic focus with the objective of developing, acquiring, and customising international knowledge to meet conditions in the HKH. With its new strategic focus, ICIMOD hopes to enhance the integration of knowledge and service-oriented activities to meet the national and regional needs of its RMCs and to share knowledge with global mountain communities.

Implementation process

The implementation process will start with refining of the annual action plan. The major activity will be planning and integration of recommendations and actions from the national and regional consultations. Ongoing programmes will be reoriented in line with the new strategic direction. Ongoing projects that do not match the priorities of the new strategic framework will be gradually phased out.

The new strategy envisions a number of specific internal changes for 2008. First and foremost, the way that ICIMOD does business will be changed through a change management training process. Professional staff and technicians will be introduced to a new work culture, working in interdisciplinary teams with clear-cut, output oriented agenda. The mainstreaming of gender and governance will be improved, and the economic dimensions of our programmes will be built up.

Conclusion

ICIMOD is concerned with the generation of knowledge and scientific information for integrated mountain development. In line with this, ICIMOD's work under MTAP II will include action research, regional knowledge sharing, and capacity building activities that improve the livelihoods of mountain people in its RMCs. Over the next five years, ICIMOD plans to implement sustainable interventions and ensure that the results of the action research that we support contributes to poverty reduction, influences policies, improves practices, and transfers knowledge and technologies that have a bearing on the lives of our ultimate beneficiaries – the poor and marginalised people in the Hindu Kush-Himalayan region.

Madhav Karki, mkarki@icimod.org

ICIMOD Board of Governors 2007/08

Regional Board Members

Eng. Ghulam Mostafa Jawad
Deputy Minister of Agriculture
Ministry of Agriculture and Irrigation
Afghanistan

Mr. Shaikh Altaf Ali
CHAIR (since April 2008)
Secretary
Ministry of Chittagong Hill Tract Affairs
Bangladesh Secretariat, Bangladesh

Mr. Sherub Gyaltshen
Secretary
Ministry of Agriculture, Bhutan

Prof. Ding Zhongli
Vice President
Chinese Academy of Sciences, PR China

Ms. Meena Gupta
Secretary
Ministry of Environment and Forests, India

U Kyaw Htun
Deputy Director General
University of Forestry, Myanmar

Dr. Jagadish Chandra Pokharel
Vice Chairman
National Planning Commission
Nepal

Mr. M. Zia-ur-Rehman
Secretary
Ministry of Food, Agriculture and Livestock
Pakistan

Independent Board Members

Dr. Jacqueline A. Ashby
Research Coordinator
Andean Change Program
International Potato Center (CIP), Peru

Prof. A.K.M. Jahir Uddin Chowdhury
Professor
Institute of Water and Flood Management
Bangladesh University of Engineering and
Technology, Bangladesh

Dr. Elke Förster
GFA Consulting Group GmbH
Representative Office Hanoi/
Senior Consultant
Vietnam

Prof. Bruno Messerli
VICE-CHAIR
Professor
Institute of Geography
University of Berne, Switzerland

Dr. Amir Muhammed
Rector, National University of Computer and
Emerging Sciences, Pakistan

Dr. Rob Visser
DCO (Chief Scientist)
Ministry of Foreign Affairs (DSI)
The Netherlands

Dr. Linxiu Zhang
Professor and Deputy Director
Centre for Chinese Agricultural Policy
Chinese Academy of Sciences (CAS)
PR China

Dr. Andreas Schild
(Ex-officio) Director General, ICIMOD

Climate Change, Glaciers, and Water Resources in the HKH Region: ICIMOD Organises Session and Launches Concrete Initiative at the First Asia-Pacific Water Summit in Japan

ICIMOD was invited to organise a session on 'Climate Change, Glaciers, and Water Resources in the Himalayan Region' at the First Asia-Pacific Water Summit held in Beppu, Oita Prefecture in Japan, December 3-4, 2007. The Summit was attended by 10 heads of government and 35 ministerial level delegations from countries in the region, as well as leaders from the region's foremost water-related institutions. The Summit was convened by the Asia-Pacific Water Forum, whose establishment was announced by the former Prime Minister Ryutaro Hashimoto at the Fourth World Water Forum in Mexico in 2006. The theme was 'Water Security: Leadership and Commitment', and entailed a bid to mobilise the political will and commitment required to put water high on the region's national agendas. The Summit was officially opened by HIH the Crown Prince of Japan, HRH Prince Willem-Alexander of the Netherlands, and HE the Prime Minister of Japan.

The ICIMOD session was graced by the presence of HIH the Crown Prince of Japan. Speakers at the ICIMOD session, which was attended by more than 150 guests, included the head of government and ministers from Japan (the major donor country in the region) and four of ICIMOD's eight regional member countries – Bhutan, China, India, and Nepal – as well as senior officials from ICHARM and JICA and the World Bank, two major donor agencies. The session was chaired by Mr Nobuo Mimura, Director of the Institute for Global Change Adaptation Science of Japan, and moderated by Dr Andreas Schild, Director General of ICIMOD.

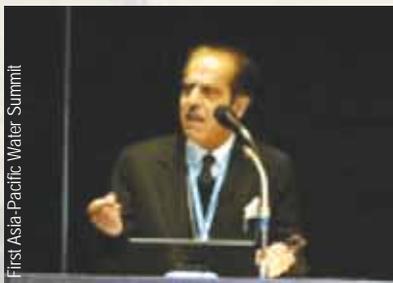
While setting the stage for discussions at the session, Dr Schild highlighted the fact that, despite their importance to human well-being, mountains have received little attention on the international development agenda. The impending disasters of melting glaciers and collapsing mountains due to receding permafrost

have become a frightening vision. The rapidly changing environment is threatening mountains as a natural system with natural and human features, and their pristine position in providing environmental services, which people take for granted. The storehouse of freshwater in the Himalayas, also considered a 'third pole', has been degrading over the years due to climate change.

The speakers addressing the session reinforced the view of the UN's Intergovernmental Panel on Climate Change, that there is insufficient data and information on climate, hydrology, and meteorology in the Himalayan region; the region is a 'blank spot' on the global map of climate change. They also stated that it is essential to strengthen mechanisms for the regional exchange of data and information to reduce scientific uncertainty and to facilitate proper planning and decision making towards the development of adaptation measures.

The dignitaries also expressed their commitment to take up a number of adaptation measures. Bhutan and Nepal are pursuing measures to adapt to the potential impact of glacier lake outburst floods on hydropower plants. Revenue from hydropower already forms the economic backbone of Bhutan, and has the potential to do so in Nepal. India's National Institute of Hydrology is analysing adaptation measures at its world-class IITs. And, China is developing and promoting technologies to enhance water-use efficiency and water conservation. Japan remarked that adaptation measures to overcome water stress and hazards should have a 'zero victim' goal, and expressed interest in contributing further through technical assistance programmes.

The speakers highlighted the need to create a platform for regional dialogue and to engage the international community in pursuing adaptation measures on a long-



H.E. Professor Saifuddin Soz, Minister for Water Resources of India



Alpinist Ken Noguchi, Japan



H.E. Lyonpo Dr. Kinzang Dorji, Prime Minister of Bhutan (right) and Hon'ble Mr Gyanendra Bdr Karki, Minister of State for Water Resources of Nepal

term basis. The World Bank pointed out that a long-term commitment from the international community for technical and financial support would be necessary. A platform for regional dialogue, driven and fully owned by the countries in the region, is urgently needed to understand the benefits of cooperation and the cost of non-cooperation. JICA implicitly supported the World Bank's view and added that the role played by ICIMOD as a regional international organisation is going to be highly instrumental in coordinating with countries in the region.

The overarching message of the session, eloquently presented by alpinist Ken Noguchi, was that unless the international donor community takes urgent action commensurate to the magnitude and scope of the problems related to climate change, glacier melting, and water resources in the Himalayan region, the consequences of climate change in terms of glacier- and water-related disasters and water stress due to

spatial and temporal variability in water availability may have a catastrophic impact on the livelihoods of the more than 1.3 billion people living in the nine river basins in the region.

The Summit Steering Committee expressed the belief that Japan will be able to highlight the importance of water and convey the outcome of the Summit in the forthcoming G-8 Summit, to be held in Japan in 2008. Furthermore, to follow up on the recommendations made by the dignitaries at its session, ICIMOD, with encouragement from the same Steering Committee, launched a concrete initiative on 'Climate Change, Glaciers, and Water Resources in the Himalayan Region,' a progress report on which will be presented to the national governments and water stakeholders of the world at the forthcoming Fifth World Water Forum in 2009.

Ramesh Ananda Vaidya, rvaidya@icimod.org

Paradigm Shift in Viewing Forestry under Climate Change Accords from Marrakesh to Bali

Forests stabilise the atmospheric concentration of CO₂ by sequestering it biologically into the terrestrial ecosystem. Realising this, emissions and removals resulting from land use, land-use change, and forestry (LULUCF) activities form an integral part of the Kyoto Protocol (KP) of the United Nations Framework Convention on Climate Change (UNFCCC). The current rules of the KP on LULUCF were accepted at COP 7 in Marrakesh (2001) under the Marrakesh Accord.

During the first commitment period (2008-2012), mitigation options applicable to most of the developing countries are confined primarily to afforestation and reforestation (AR) activities. AR projects under the Clean Development Mechanism (CDM) have been restricted to areas that were not forested in 1990. Avoiding deforestation was not accepted as an eligible CDM for two reasons:

- 1) It was thought that leakage from projects that avoided deforestation could be very significant and difficult to estimate and monitor.
- 2) There was strong opposition to including large-scale land use change management because this would reduce efforts in the energy sector.

Community-based forests also did not meet the CDM criteria as such forests were mainly used for avoiding emissions from deforestation and conserving degraded forest. In addition the KP also neglected to account for global deforestation, which accounts for an estimated 18% to 25% of global emissions, as highlighted in the

Stern Review (2007). This weakened the KP's position on addressing emission mitigation and was a major reason why the CDM-AR activity was unable to attract as many LULUCF projects as initially intended.

At COP 9 (2003), the need to include 'avoided deforestation' as a strategy to reduce emissions was realised. COP 11 (2005) adopted a broader term 'reduced emissions from deforestation' (RED), which includes a wider range of forest management activities in addition to conservation activities. The adoption of RED overcame earlier difficulties, as it accounts for emissions from deforestation, addresses leakage, and helps reduce transaction costs. Each country can benefit from RED depending on how responsible they are in reducing emissions from deforestation. The Stern Review (2007) states that interventions in the forestry sector are among the least cost mitigation solutions for carbon.

With all these developments in RED taking place, discussions and side events at the COP 13 in Bali in 2007 were dominated by negotiations and presentations on reduced emissions from deforestation and degradation (REDD); 'forest degradation' (the removal of woody biomass without reducing the area to less than 10-30% canopy cover) was also recognised and added to 'deforestation'. Finally, the Parties decided to address emissions from deforestation and forest degradation by taking into account forest management under REDD.



Emissions from forest degradation as a result of the removal of woody biomass without a reduction in the forest area (forest thinning)

Partnership Facility (FCPF) with a financial plan of US \$165 million allocated to reduce emissions from deforestation and degradation in developing countries in the tropics and to preserve forests by linking economic incentives to forest management and conservation.

With the Kyoto Protocol coming to an end in 2012, the climate conference in Bali set the stage for the development of a new 'roadmap' for a follow-on agreement. The centrepiece of this new agreement will be to rely on the forestry sector for climate stabilisation, being the least cost mitigation solution. While this will open up opportunities in community forestry, how baselines are drawn will determine if community forestry will actually benefit.

The COP 13 decision on REDD

- Acknowledges the contribution of the emissions from deforestation to global anthropogenic greenhouse gas emissions;
- Recognises the potential role of further actions to reduce emissions from deforestation and forest degradation in developing countries in helping to meet the ultimate objective of the Convention;
- Affirms the urgent need to take further meaningful action to reduce emissions from deforestation and forest degradation in developing countries;
- Invites Parties to further strengthen and support ongoing efforts to reduce emissions from deforestation and forest degradation on a voluntary basis.

The Bali outcome on REDD was important in that the Parties agreed to strengthen and support REDD policies to reduce emissions. Although the decision invites parties to take action on a voluntary basis only, progress has definitely been made between the Marrakesh and Bali meetings. Carbon measurement methodology at the field level is now accepted, based on the recommended methodology of the IPCC. In 2007, the World Bank established the new Global Forest Alliance (GBA) with conservation agencies like Nature Conservancy, Conservation International, and WWF to create funds to intervene in the forestry sector. For this, the World Bank has established the Forest Carbon

ICIMOD's contribution to the REDD policy process

Since 2003, ICIMOD has been implementing an action research project 'Kyoto: Think Global Act Local'¹, with the aim of investigating the possibility and potential of including community-managed natural forests as an eligible carbon mitigation activity under future international climate change agreements. The project is essentially a REDD project. It has developed carbon measurement methods using IPCC guidelines and has monitored carbon fluxes over a three-year period in six community managed forest sites, three in India and three in Nepal. Results show that net CO₂ sequestration ranges from 13.6 to 7.1 t CO₂ per hectare annually, where forests were managed and harvested regularly to meet community subsistence needs.

At the regional level, ICIMOD has held several seminars and meetings to sensitise policy makers to the opportunities and challenges faced by the forestry sector under the developing climate change accords. This research project has enabled ICIMOD to maintain its leading position in climate change policy research related to mountain communities and carbon forestry. The carbon measurement methodology is now available for organisations in the Hindu Kush-Himalayan countries to use.

Kamal Banskota, kbanksota@icimod.org
Bhaskar Singh Karky, bkarky@icimod.org

¹ **Acknowledgements:** This project is a research and capacity building programme financed by the Netherlands Development Co-operation (DGIS) and led by the University of Twente (<http://www.communitycarbonforestry.org/home.htm>).

Symposium on Biodiversity Resources and Climate Change

The International Society for Tropical Ecology and HNB Garhwal University organised the Tropical Ecology Congress in Dehradun, India from 2-5 December 2007. The Congress was co-organised by the Forest Research Institute and Wildlife Institute of India, and sponsored by many institutions including ICIMOD. The congress was attended by some 500 participants from all over the world. In addition to the technical sessions, the main feature was the organisation of symposia on topics of global interest, such as Biodiversity Resources in the Hindu Kush-Himalayas: Challenges and Responses to Climate Change; Biodiversity Conservation in the Tropics: Issues, Concerns and Strategies; Climate Change: Impact, Assessment and Management; and Mountain Ecology: Focus on the Indian Himalayan Region.

During the Congress, ICIMOD organised a symposium on 'Biodiversity Resources in the Hindu Kush-Himalayas: Challenges and Responses to Climate Change', coordinated by Dr Eklabya Sharma, and chaired by Professor A.N. Purohit, former independent member of ICIMOD's Board of Governors. Seven panelists (Professor P.S. Ramakrishnan from the Jawaharlal Nehru University, India; Professor Yang Yong-Ping and Dr Yang Xuefei from the Kunming Institute of Botany, China; Dr Laxman Joshi from the World Agroforestry Centre, Indonesia; and Drs Eklabya Sharma, K.P. Oli, and Yan Zhaoli from ICIMOD) made presentations. Some 60 participants attended the symposium, including two former independent members of ICIMOD's Board of Governors (Professors A.N. Purohit and J.S. Singh) and the four past and current Directors of the GB Pant Institute of Himalayan Environment and Development.

The panel presentations covered a wide range of topics including traditional ecological knowledge systems; protected area and landscape management of biodiversity in the changing climate; dynamics and responses to climate change in high altitude wetlands; plant succession in recently deglaciated areas; impacts of climate change on rangelands and herders' livelihoods; biodiversity conservation in land-use transformation systems using a jungle rubber example from Indonesia; and access and benefit sharing from biodiversity resources in the global change context. The role of both formal and traditional ecological knowledge systems was highlighted by the presenters in relation to coping with climate change and globalisation. The discussion on traditional knowledge systems concluded that it is as important to address societal perspectives and human elements as it is to consider biodiversity resources. The presentations also used examples to describe how intangible benefits can be converted into



Yan Zhaoli

ICIMOD Symposium at the Tropical Ecology Congress, Dehradun: Panelist Professor P.S. Ramakrishnan making a presentation

tangible benefits in the context of the recent changes that mountain societies are facing. Biodiversity rich areas and mountains are particularly vulnerable to the impacts of climate change. It was concluded that the challenges of climate change, in terms of both mitigation and adaptation, demand multi-stakeholder partnerships and multi-disciplinarity, especially when it comes to mountains. The panelists provided some good examples of both multi-stakeholder partnerships and multi-disciplinarity and helped to clarify further the various processes for adoption in future. The importance of legal systems and policies on the effectiveness of adaptation were also emphasised.

The symposium deliberations and outcomes will feed into the report on 'Assessment of Climate Change Vulnerabilities on Mountain Ecosystems of the Eastern Himalaya', which will be used by ICIMOD, its partners, and the MacArthur Foundation in future programming on biodiversity and climate change research, and for development in the eastern Himalayas.

Both the Tropical Ecology Congress and the ICIMOD Symposium received wide media coverage through the publication of highlights in newspapers and on television. The Congress was inaugurated by the Honourable Chief Minister of Uttarakhand and the valedictory speech was delivered by His Excellency the Governor of Uttarakhand, Professor S.P. Singh, Vice-Chancellor of HNB Garhwal University. The Congress Convener appreciated ICIMOD's contribution in his address in both the inaugural and closing functions. Dr Yang Xuefei, one of the panel presenters, received the 'Alice Murphy Award' for young ecologists (below 40 years of age). Symposium organisers, including Dr Eklabya Sharma from ICIMOD, were honoured during the valedictory function for their contribution to the great success of the Congress.

Eklabya Sharma, esharma@icimod.org

Outcomes of the 2nd Annual Meeting of the Himalayan University Consortium (HUC)

Over 25 participants, including chancellors, vice-chancellors, rectors, deans, directors, professors, and other senior officials from fifteen universities, institutes, and research centres in five Himalayan countries, and one each from Austria and Thailand, were brought together by ICIMOD and other key members of the Himalayan University Consortium (HUC) for the second annual meeting of HUC at ICIMOD on 26-27 February, 2008.

The purpose of the meeting was to review and operationalise two proposals on the strengthening of Afghan universities and collaboration around change (notably climate change, economic globalisation and migration, and urbanisation), and to finalise the vision, mission, goals, and functions of the Consortium. The major outcomes of the meeting are summarised below.

1. **Mission:** The mission of the Consortium was tentatively confirmed as to 'encourage and facilitate relevant and responsive research, exchange, education, and outreach in mountain development sciences and related areas. To this end HUC will support the acquisition, development, archiving, and dissemination of knowledge and documents relevant to a wide spectrum of disciplines, and promote the conducting of research and related academic training programmes by HUC members jointly and individually for the benefit of researchers, civil society, and the development community in HKH region'.
2. **Functions of the Consortium:** The Consortium will initiate and steer programmes, starting with the two programmes identified so far, but may venture into other collaborative activities as well.
3. **Name:** The name of the Consortium was confirmed as the Himalayan University Consortium (HUC).

4. **Full membership:** Full membership was in principle restricted to the fifteen founding members, to be extended to include one university each from Bangladesh, Bhutan, and Myanmar, so as to represent all HKH states. Other requests or proposals may be considered on a case-by-case basis.
5. **Associate membership:** Universities and institutes located outside the HKH region countries that provide knowledge resources to HUC may be given associate membership status; non-member universities within the HKH region may be invited to participate in various HUC programmes and activities.
6. **Charter:** The meeting unanimously adopted the proposed Consortium charter and decided to hold the next meeting in Dehradun, India in March 2009. This meeting will be hosted by the Indian Consortium members, confirming that ownership of the initiative extends well beyond ICIMOD.
7. **Capacity building programme for Afghan universities:** A human capacity building programme developed by ICIMOD and its key HUC partners and funded by IDRC, Canada, will facilitate training and capacity building of the faculty members and staff of Afghan universities. In particular, the programme will aim to help Kabul University regain its position as the leading university in the Western Himalayas and in the development of Afghanistan. This aim will mainly be pursued through scholarships for masters and diploma courses, largely at regional universities, thus strengthening the teaching, course design, and research capacities of university faculty in Afghanistan. In addition, short training courses will be offered for university staff, as well as government officials, in technical and management topics to enhance research and outreach on mountain issues. The programme will particularly focus on Kabul University as a leading university in Afghanistan.
8. **Afghan programme needs assessment:** The meeting also made decisions about the management of the Afghanistan programme and the selection of candidates in a participatory, transparent, and efficient manner. It was also agreed that, based on a clear ToR, a mission of officials from ICIMOD and at least two universities in the region will carry



Narendra Bajracharya

out a needs assessment and prioritisation by early summer this year. This mission will also make an inventory of the HUC member universities that may be able to cater for these needs.

9. **Project Steering Committee:** The PSC (comprised of HUC representatives), the secretariat of which is based at ICIMOD, in close collaboration with Kabul University, ensures that returned faculty members effectively strengthen their universities by ensuring that they are able to apply their newly acquired knowledge.
10. **Model programme:** In general, the Afghan strengthening programme will be studied as a case and model of how support to a weaker member of the Consortium can be boosted by pooling together the resources of the relatively stronger members. While Afghan universities have several international support programmes in place, the uniqueness of the current programme was seen to be its regional, mountain-specific, and collaborative nature. This programme is also expected to strengthen the regional network of mountain universities.
11. **Proposal for a new collaborative programme on adaptation to change:** A new proposal was presented and embraced by the meeting under the working title 'Adaptation to Change and Enhancing Resilience – A Proposal for a Collaborative Programme of Hindu Kush-Himalayan Universities'. The idea for this programme was first conceived as

a response to the ironic dichotomy between the clearly observable changes in the region, and the scarcity of consistent data to confirm the magnitude and impact of trends related to climate change. The meeting debated the proposal and widened its focus to include research on, and adaptation to, globalisation and urbanisation, in addition to climate change. Other major issues under debate were the need for field verification of data (especially GIS and RS data), coupled with the need for field research by students, and the need to make research data and findings better available within, and especially across, universities. It was decided to develop this proposal into a full proposal involving key members of the Consortium.

12. **Sharing mountain-specific curricula:** A number of universities also agreed to start drawing up and sharing mountain-specific curricula for one or more masters and diploma courses shortly after the meeting. This responds to the desire for short-term action and results, since 'collaborative change' will take another year to become operational.
13. **Call to governments:** The meeting ended with the adoption of a call to governments in the HKH region to give the utmost priority to climate change (referring with appreciation to the initiatives of India and China in this regard).

Diederik Prakke, dprakke@icimod.org

Switzerland and Sweden Support ICIMOD

Switzerland and Sweden have become the second and third non-regional members of ICIMOD, after Norway, to sign agreements with ICIMOD to support the new strategic plan. Switzerland has committed to make a contribution of 5 million Swiss Francs in core funds to ICIMOD for the five-year period from 2008 to 2012, equivalent to US\$ 4.46 million at the current exchange rate; SDC has already paid the first instalment for 2008. Sweden has committed to make a contribution of 15 million Swedish Kroner in programme funds for the

three-year period from 2008 to 2010, equivalent to US\$ 2.35 million at the current exchange rate, for the strategic programme on Integrated Water and Hazard Management. SIDA has already paid the first instalment towards the programme costs of 2008. ICIMOD expresses its wholehearted thanks to these two non-regional members for their strong support of the new Strategic Plan.

Milan Raj Tuladhar, mtuladhar@icimod.org

ICIMOD Press Releases

Eco Everest featured in Earth.Google.com (28 April 2008) <http://www.icimod.org/home/news/news.content.php?nid=82>

Expedition draws attention to climate change threats and unveils world's highest photo exhibition

Eco Everest Expedition 2008 launches from Everest Base Camp (18 April 2008)

<http://www.icimod.org/home/news/news.content.php?nid=81>

ICIMOD repeats study on Himalayan Glacier (17 April 2008)

<http://www.icimod.org/home/news/news.content.php?nid=80>

Eco Everest Expedition Pre Departure Press Conference by Asian Trekking (3 April 2008)

<http://www.ecoeverest.net.np/pressrelease.php>

Eco Everest Expedition 2008 to be launched from Everest Base Camp on 18 April 2008 (24 March 2008)

<http://www.icimod.org/home/news/news.content.php?nid=77>

Focusing on climate change in the Himalayas and celebrating ICIMOD's 25 years for mountains and people

(11 February 2008) <http://www.icimod.org/home/news/news.content.php?nid=76>

New Regional Board Members

ICIMOD is pleased to announce the new Regional Board Members from Bangladesh, Bhutan, India, and Pakistan.

Mr Shaikh Altaf Ali, Secretary, Ministry of Chittagong Hill Tracts Affairs, Bangladesh

Mr Shaikh Altaf Ali, Secretary, Ministry of Chittagong Hill Tracts Affairs, was nominated as ICIMOD Board Member by the Government of Bangladesh in April 2008. Mr Ali is a career civil servant. He joined the Bangladesh Civil Service Administration Cadre in 1981 as an Assistant Commissioner. In his long professional career, he has worked in different ministries in different capacities and been involved in the formulation and implementation of national planning and programming. He has long experience in field administration and has served in different capacities including Deputy Commissioner, Additional Deputy Commissioner, Additional District Magistrate, Upazila (sub-district) Magistrate and Upazila Nirbahi Officer (Chief Executive Officer of a sub-district), and has been involved in the implementation and management of several development programmes and projects. Mr Ali has held many senior positions in the government including Secretary, Ministry of Civil Aviation and Tourism; Member (in charge) Planning Commission; and Additional Secretary, Ministry of Information. In April 2008, he joined the Ministry of Chittagong Hill Tracts Affairs as Secretary. The Ministry is responsible for the overall planning, coordination, supervision, and formulation of policies relating to Chittagong Hill Tracts affairs. Mr Ali has a Masters degree in Commerce and has attended training events at home and abroad in management and development administration. He is a member of several professional organisations, is actively involved in social work, and has travelled extensively.



Professor A.K.M. Jahir Uddin Chowdhury, Professor, Institute of Water and Flood Management, Bangladesh University of Engineering and Technology, Bangladesh

A.K.M. Jahir Uddin Chowdhury is a Professor at the Institute of Water and Flood Management (IWFM), Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh. His research focus is on management of water resources systems. He has authored or co-authored 23 papers in national and international journals, 38 papers in local and international conferences and workshops, and 29 research reports. Professor Chowdhury graduated as a civil engineer from BUET in 1974, after which he gained an M.Sc. (water resources) from BUET in 1977 and a Ph.D. from the University of Strathclyde, UK, in 1982. He joined the Department of Water Resources Engineering, BUET as a lecturer in 1974, and became Associate Professor in 1984 and Professor in 1987. He has been Director of the Institute for two terms: 1985-1988 and 2001-2003. He spent a year as a visiting scientist at the School of Civil and Environmental Engineering, Cornell University, USA, in 1989, and was a member of the National Water Resources Council of the Government of the People's Republic of Bangladesh during 2002 to 2006. Professor Chowdhury has provided advisory and consultancy services in the field of water management, hazard management, and water resources system modelling to 30 projects from government, semi-government and autonomous organisations.



Mr Sherub Gyaltshen, Secretary, Ministry of Agriculture, Royal Government of Bhutan

Mr Sherub Gyaltshen started his career in the Bhutanese civil service in 1978. In his 29-years career, Mr Gyaltshen has made valuable contributions in the Ministry of Agriculture in various capacities. Besides serving as Acting Director and subsequently as Director of Research and Extension from 1996-2001, Mr Gyaltshen served as Director and then as Director General in the Department of Agriculture (2003-2007) before being appointed as the Secretary of the Ministry of Agriculture on 18 August 2007. Apart from his present affiliation, Mr Gyaltshen is also actively involved in a number of other government bodies. He is the Chairman of the Board of Directors, Bhutan Development Finance Corporation Limited, Chairman of the Board of Directors, Food Corporation of Bhutan Limited (of which he was Managing Director from 2001-2003), Chairman of Bhutan Agro Industries Limited, Vice-Chair of the Drug Regulatory Authority, and member of the National Land Commission of Bhutan. He has also held high profile positions as Chairman of Druk Seed Corporation and as a member of the Boards of Bhutan Agro Industries Limited and Bhutan Finance Corporation Limited. Mr Gyaltshen has a Bachelors Degree in Agricultural Engineering from Orissa University of Agriculture and Technology, India. He also received professional training on Post Harvest Horticulture Technology (1983) from TDR, London, and completed a Refrigeration Engineering and Post Harvest Technology course conducted by CSIRO, Sydney, Australia (1980).



Professor Ding Zhongli, Vice President, Chinese Academy of Sciences, China

Ding Zhongli, Professor at the Institute of Geology and Geophysics, Chinese Academy of Sciences (CAS), was born in Shengzhou, Zhejiang Province in 1957. He was elected as Academician of CAS in 2005, as Chairman of the Chinese National Committee for the International Geosphere-Biosphere Programme (CNC-IGBP) in January 2008, and as a member of the Standing Committee of the National People's Congress (NPC) of China in March 2008. He became Vice-President of the Chinese Academy of Sciences in January 2008, following nearly seven years as Director of the CAS Institute of Geology and Geophysics. For the past two decades, Professor Ding has focused his research on the Quaternary climate change and associated forcing mechanisms, and made systematic observations and a pedostratigraphic correlation of the loess sequences over the Chinese Loess Plateau, laying a foundation for later study. For the first time, he established a 2.6-Ma orbital timescale of stacked grain-size records for Chinese loess that is highly compatible with the marine isotope record. He found that the East-Asian winter monsoon intensity registered in the loess grain-size was in phase with the Milankovitch cycles, particularly the 100 ka eccentricity cycle, and that the winter monsoon intensity is closely related to global ice volume changes. A recipient of many awards, his achievements and many innovative results have been published in numerous highly-ranked international journals and are widely cited. He has also contributed to textbooks that have been published in America and England. Professor Ding has a Ph.D. in Quaternary Geology from the Institute of Geology, Chinese Academy of Sciences and a Master of Science in Geochemistry from the Institute of Geology, Chinese Academy of Sciences.



Ms Meena Gupta, Secretary, Ministry of Environment and Forest, Government of India

Ms Meena Gupta joined the Indian Administrative Service in 1971 and has worked in various senior positions in the Government of Orissa and the Government of India since then. She has worked for significant periods of time in the sectors of health, labour, tribal affairs, and environment and forests. As Secretary of Health in the Government of Orissa, she introduced several pioneering reforms. In the Ministry of Labour in the Government of India she was associated with the Child Labour (Protection and Regulation) Act and the National Child Labour Projects. She also worked in the ILO Office, New Delhi for four years on a child labour project which extended support to the Government of India's efforts. Ms Gupta's recent postings have been as Additional Secretary and Special Secretary in the Ministry of Environment and Forests, Secretary in the Ministry of Tribal Affairs, and, since June 2007, Secretary in the Ministry of Environment and Forests. As Secretary, Tribal Affairs, Ms Gupta was responsible for the enactment of the landmark legislation, the Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006, which for the very first time recognised the primacy of the rights of people, particularly tribals, who have been living and depending on forests for their livelihood for generations. Ms Gupta moved to the Ministry of Environment and Forests as Secretary on 1 June 2007. Ms Gupta has written a number of papers and articles which have been published in different journals and newspapers.



Mr Muhammad Zia-ur-Rehman, Secretary Ministry of Food, Agriculture and Livestock (MINFAL), Pakistan

Mr Muhammad Zia-ur-Rehman started his career in the Civil Service of Pakistan as an Assistant Commissioner/Sub Divisional Magistrate in 1976. Since then he has served in different government offices holding important positions over the past three decades. To name a few, he was the Secretary, Services to the Punjab Government (1990-1994-1996); Secretary to the Governor of Punjab (1997-1999); Secretary, Ports and Shipping Division (2005-2006); Secretary, Planning and Development Division (2006); and has been the Secretary of MINFAL since 1 June 2007. Mr Zia-ur-Rehman has also served as deputy secretary, joint secretary, and in other capacities on different boards, and in various divisions, and departments of the Government. Mr Zia-ur-Rehman received training and studied courses on administration and management within Pakistan, as well as abroad in the UK, USA, South Korea, Singapore, and Nepal. He has two Masters Degrees – in Economics and Political Science – and a Bachelors Degree in Law.



In Memoriam Mr Md. Shaheedul Haque

Mr Md. Shaheedul Haque was the Regional Board Member for Bangladesh from February 2008 until his sudden and untimely death in March 2008. During his brief period as Regional Board Member Mr Md. Haque became a true friend to ICIMOD. His contribution, though short lived, will be remembered by all of us. He will be sorely missed. ICIMOD offers its heartfelt condolences to his family, friends, and colleagues.

New Appointments at ICIMOD

Babita Bohra, Regional Rangeland Consultant, Environmental Change and Ecosystem Services

Dr Babita Bohra, an Indian National, joined ICIMOD as a Regional Rangeland Consultant for Regional Rangeland Programme III in the Environmental Change and Ecosystem Services Programme. Dr Bohra obtained her PhD, majoring in Dairy Husbandry and Animal Nutrition, from the GB Pant University of Agriculture and Technology (GBPUA&T), Pantnagar, Uttarakhand, India. During her studies, she carried out a prestigious project on 'Rangeland resources and dairy farming in the mountain agro-ecosystems of Uttaranchal'. Dr Bohra has some seven years of work experience in the mountains of Uttarakhand, India. Her work is primarily focused on dairy farming, rangeland resources, and livestock dependent livelihood systems in mountain areas. She has also worked as a Senior Research Fellow on the project 'Development of strategies to improve nutrition of dairy animals in the mountains of Uttaranchal'. Dr Bohra has published sixteen research papers and a book related to crucial issues of mountain development.



Marianne Heredge, Programme Officer, Mountain Forum Secretariat

Ms Marianne Heredge joined the Mountain Forum Secretariat as Programme Officer in August 2007. She is a British/French citizen with a varied background, having trained as a teacher and worked for local government and in the financial sector as a management consultant and project manager. More recently, she was involved in financial regulation and anti-money laundering in London. She has an MBA and an MSc in Development Studies from Birkbeck College, University of London. In Nepal for the last two and a half years, Marianne has taught children in mountain village schools, taught English in Kathmandu, and has been involved in training trekking staff and teachers. As Programme Officer, Marianne's role will be to continue the development and maintenance of the on-line library and to edit the bi-annual Mountain Forum Bulletin.



Frans Neuman, Executive Secretary, Mountain Forum Secretariat

Mr Frans Neuman joined the Mountain Forum Secretariat in January 2008. He is from the Netherlands and brings with him expertise in knowledge management and networking in a variety of fields around the world. With a background in agriculture and development, Francis comes to Mountain Forum from IICD (International Institute for Communication and Development), where he focused on synthesising lessons learned and fostering the use of ICTs in development processes. As Technical Advisor for the Netherlands Government, Francis was involved in international agriculture research and, in particular, ecoregional programmes such as Condesan and the African Highlands Initiative. An important focus of his work was multi-stakeholder involvement in addressing a geographically-focused agenda. During the last decade, Francis has carried out projects with regional networks and national partners in various continents. -



Diederik Prakke, Head, Human and Institutional Development

Mr Diederik Prakke joined ICIMOD as head of HID in January 2008. He is a Dutch national and is looking forward

- among partners: to strengthening partner organisations and partnerships (such as the HUC),
- towards partners: improving ICIMOD trainings and workshops, and
- at ICIMOD: bringing out the best in people through capacity building and change.

Directly prior to joining ICIMOD, Diederik worked for six years with MDF Training and Consultancy, designing and conducting courses, workshops, and consultancies in Asia, Africa, and Europe. He covered issues such as (inter-cultural) communication, conflict management and negotiation, meeting and facilitation skills, HRD and coaching, time management, advisory skills, leadership and team building, training of trainers (ToT), project formulation (PCM), planning, monitoring and evaluation (PM&E), procurement and financial management, institutional and organisational development (ID/OD), and implementing change. Bringing his two children with him to Kathmandu, Diederik is no stranger to this region. He lived in Bhutan for seven years where he initially worked as an irrigation engineer, in which field he holds a Masters degree. Diederik joins ICIMOD with 'a sense of hope and hunger, keen to see whether I will realise the dreams I bring to this job'.



Sagendra Tiwari, Programme Manager, ICIMOD-Afghanistan Country Office

Mr Sagendra Tiwari joined the ICIMOD-Afghanistan Country Office in Kabul as Programme Manager on 20 November 2007. He will be responsible for the implementation of the Biodiversity and Community Forestry project funded by USAID. Mr Tiwari brings with him a wealth of experience on forest, protected areas, natural resource management, and biodiversity. He was with the Government of Nepal for over twenty years and held key positions such as M & E Officer and Chief of Training in the Department of Forest. Mr Tiwari took voluntary retirement in 1999 after which he became engaged in the conservation and development sector. He worked for GTZ in Nepal as the Programme Coordinator for the Churia Forest Development Project in eastern Nepal. He joined IUCN-Nepal as Programme Coordinator for four years and as Acting Country Representative for two years and was largely involved in programmes and projects linking conservation with sustainable livelihoods. Mr Tiwari has a Masters Degree in Resource Management from University of Edinburgh, UK and a Postgraduate Diploma in Forestry and allied subjects (AIFC) from the Indian Forest College, Dehradun, India.



Brigitte Hoermann, Business Economist, Sustainable Livelihoods and Poverty Reduction Programme

Dr Brigitte Hoermann, an Italian national, joined ICIMOD as a Business Economist on 1 March 2008. She is a team member in the Economic Analysis Unit within the Sustainable Livelihoods and Poverty Reduction Programme (SLPR). At ICIMOD, Dr. Hoermann will focus on income generation and poverty reduction in mountain areas through land-based niche products and off-farm activities. The identification of opportunities to strengthen rural urban linkages through analysis and equitable promotion of pro-poor value chains and the analysis of investment opportunities for remittances will be particularly relevant. Before joining ICIMOD, Dr Hoermann held various positions within the private sector in the United States, Indonesia, and Europe and worked in the field of development cooperation with a primary focus on rural economic development in southern Nepal. Dr Hoermann has a strong academic and research background. She obtained her PhD in Business Administration from Innsbruck University, Austria, completed a Master's in International Development by research from Melbourne University, Australia, and holds a Master's in Communication Science from Salzburg University, Austria.



Ines Freier, Senior Environmental Economist, Economic Analysis Unit, Sustainable Livelihoods and Poverty Reduction Programme

Dr. Ines Freier, a German national, joined ICIMOD as a Senior Environmental Economist in the Economic Analysis Unit of the Sustainable Livelihoods and Poverty Reduction Programme in March 2008. Her work will focus mainly on strengthening the Centre's competence in payment for environmental services and environmental and social certification. Dr Freier has more than 10 years of professional experience as a consultant for environmental policy and management, working for GTZ, the German Federal Ministry for Economic Development and Co-operation, the German Federal Environmental Agency, and the EU Commission in India, Nepal, Central Asia, Latin America, and the European Union. She holds a PhD in Political Sciences. She did a postgraduate degree at the German Development Institute, where she worked on community forestry in the Terai region of Nepal. She completed her graduate studies in Economics and Latin American Studies.



Daan Boom, Coordinator, Integrated Knowledge Management and Capacity Development

Mr Daan Boom, a Dutch/British national, joined ICIMOD on 1 March as Integrated Knowledge Management and Capacity Development Coordinator. Daan's primary task at ICIMOD will be to coordinate and implement the information and knowledge management strategy of ICIMOD and ensure integration of knowledge into the Centre's work, application of lessons learned, and transfer and effective dissemination of ICIMOD's knowledge to regional centres and networks and vice versa. He will also be ICIMOD's coordinator for Asia Pacific Mountain Network.

Prior to joining ICIMOD, Daan headed the Knowledge Management Centre of the Asian Development Bank in Manila from 2003 to 2007. For the ADB, he drafted and implemented a knowledge management framework covering improvement of internal processes and an effective dissemination and outreach programme. Before joining ADB, he was Director Knowledge Management at the international accounting firm KPMG. Daan graduated in Library and Information Science from The Hague and Amsterdam, the Netherlands.



Karma Tsering, Coordinator ICIMOD-MacArthur project

Mr Karma Tsering joined ICIMOD as the Coordinator of the ICIMOD-MacArthur project: "Assessment of climate change impacts, vulnerability of mountain ecosystems in the Eastern Himalaya" in the Environmental Change and Ecosystem Services programme (ECES) on 11 February 2008. He brings with him 17 years of professional training and field experience in both biodiversity management and climate change sciences and applications. Before joining ICIMOD, Mr Tsering worked for the Ministry of Agriculture, Royal Government of Bhutan, as the Chief Meteorologist under the RNR (Renewable Natural Resources) Research Council of Bhutan (CORRB). He was also the Permanent Representative of Bhutan to WMO (World Meteorological Organization), and National Focal Person for IPCC (Intergovernmental Panel for Climate Change). Mr Tsering was one of the lead authors in the preparation of the 1st National Biodiversity Action Plan, the National Adaptation Program of Action (NAPA), and is currently involved in the preparation of the Second National Communication. Mr Tsering has a Master's Degree in Applied Genetics in Conservation and Use of Plant Resources from the University of Birmingham, UK, and a degree in Agricultural Engineering from the University of Adelaide, Australia.



ICIMOD Workshops, Meetings, and Training Programmes October 2007 to March 2008

Event	Date	Place
Documentation Workshop on Application of Satellite Rainfall Estimation in the Hindu Kush-Himalayan Region	1-5 October 2007	Kathmandu, Nepal
Regional Training on Spatial Analysis Concepts, Tools, and Application of Geo-Informatics for Protected Area Management held in connection with the HKKH Partnership Project	1-11 October 2007	Kathmandu, Nepal
Access and Benefit Sharing (ABS) From Genetic Resources	8-9 October 2007	Nagaland, India
Workshop on Application of FAO/UNEP Land Cover Classification System (LCCS) for the Study of Land Cover Dynamics in CKNP Karakoram International University, Gilgit, Pakistan	31 October - 1 November 2007	Gilgit, Pakistan
Fourth Steering Committee Meeting of Hindu Kush-Himalayan Flow Regimes for International Experimental and Network Data (HKH-FRIEND)	15-16 November 2007	Kathmandu, Nepal
Prakashan Exhibition (Grand Book sale)	19-24 November 2007	Kathmandu, Nepal
ICIMOD Board of Governors' Meeting	26-28 November 2007	Dhulikhel, Nepal
Field Demonstration in Bio monitoring in the Middle Marshyangdi Project	21 November 2007	Lamjung, Nepal
ASSESS-HKH Dissemination Workshop on Rapid Field Bio-assessment Method (Field Screening Protocol)	26-29 November 2007	Kathmandu, Nepal
International Conference on Experiences with Prospects for Regional Exchange and Cross Border Cooperation in Mountain Areas	29 November - 2 December 2007	Kathmandu, Nepal
ICIMOD Symposium on Biodiversity Resources in the Hindu Kush-Himalaya: Challenges and Responses to Climate Change during the Tropical Ecology Congress 2-5 December 2007	3 December 2007	Dehradun, India
ICIMOD Day 2007 – Eco Drama, 'For Tomorrow', Rimal Theatre, Gurukul, Old Baneswor	5 December 2007	Kathmandu, Nepal
Regional Workshop on Mainstreaming Gender in Medicinal and Aromatic Plants Programme	10-12 December 2007	Kathmandu, Nepal
International Mountain Day 2007, Media Exposure Visit, Cosponsor Gorkha Tourism	11 December 2007	Kathmandu, Nepal
Training on Global Positioning System for Field Data Collection in Sagarmatha National Park (SNP)	12-13 December 2007	Monjo, SNP, Nepal
Climate Change and Vulnerability of Mountain Ecosystems in the Eastern Himalayan Region (Nepal Stakeholder Workshop)	12-13 December 2007	Kathmandu, Nepal
Expert Consultation on Developing Training Framework on Participatory Integrated Watershed Management (PIWM)	17-21 December 2007	Kathmandu, Nepal

Value Chain Development Training for Facilitators	17-21 December 2007	Dehradun, India
Private Sector Participation for Wetlands and Water Conservation	19 December 2007	Kathmandu, Nepal
Mountain GIS e-Conference: Promoting Geographic Information and Earth Observation, Applications for the Sus. Dev of the HKH Region	14-25 January 2008	Kathmandu, Nepal
Training of Trainers in Advocacy Strategies	27 January - 2 February 2008	Kathmandu, Nepal
Project Evaluation Mission meeting with Executive Members of Alital Multi-purpose Cooperative	29 January 2008	Alital, Dadeldhura district of Nepal
Project Evaluation Mission meeting with Executive Members of Annapurna Beekeeping and Environment Promotion Centre, Kaski	31 January 2008	Pokhara, Nepal
World Wetlands Day 2008	2 February 2008	Kathmandu, Nepal
Project Evaluation Mission Meeting with field staff of the Center for Environmental and Agricultural Policy Research Extension and Development in Kabhre district, Nepal	3 February 2008	Panchkhal, Kabhre, Nepal
Regional Programme Development Workshop on Enhancing Livelihoods and Reducing Poverty of Mountain People by Linking High Value Products and Services (HVPS) to Value Chains and Markets	4-5 February 2008	Kathmandu, Nepal
Project Evaluation Mission meeting with staff of RNR-RC, Bhumtang and Executive Members of Beekeeper's Association of Bhutan	6 February 2008	Bumthang, Bhutan
Project Evaluation Mission meeting with project partner organisations in Pakistan	10-12 February 2008	Islamabad and Peshawar, Pakistan
Project Evaluation Mission meeting with Dr YS Parmar University of Horticulture and Forestry and Society for Technology Development, Himachal Pradesh, India	14 February 2008	Kullu, Himachal Pradesh, India
Project Evaluation Mission meeting with Central Himalayan Environment Association, Uttarakhand, India	18 February 2008	Nainital, India
2 nd Annual Meeting: Operationalising the Aspirations of the Himalayan University Consortium	26-27 February 2008	Kathmandu, Nepal
Country Operational Planning Workshop	28 February 2008	Kathmandu, Nepal
Writershop for the ICIMOD Resource Book for Afghanistan	29 February - 7 March 2008	Nagarkot, Nepal
Country Operational Planning Workshop, India-West	3 March 2008	Shimla, India
Country Operational Planning Workshop, India-East	11 March 2008	Shillong, India
Climate Change and Vulnerability of Mountain Ecosystems in the Eastern Himalayan Region	11-12 March 2008	Shillong, India
Orientation Workshop on HKKH-Partnership Decision Support Tool Box	13-14 March 2008	Kathmandu, Nepal
Country Operational Planning Workshop, Bangladesh	16 March 2008	Dhaka, Bangladesh
Country Operational Planning Workshop, China	21 March 2008	Kunming, China
Country Operational Planning Workshop, Afghanistan	27 March 2008	Kabul, Afghanistan
Workshop on High Altitude and Water Management in the Hindu Kush-Himalayan Region - regional consultation with Bhutan, China, India and Nepal	27-29 March 2008	New Delhi, India
Consultative Workshop on Management of Flash Floods – Capacity Building and Awareness Raising in the Hindu Kush-Himalayas	27-28 March 2008	Kathmandu, Nepal
International Workshop on Cryosphere and Hazards for the Hindu-Kush Himalaya and Tibetan Plateau	31 March - 2 April 2008	Kathmandu, Nepal
ICIMOD 2nd International Training Course on Low Cost Soil and Water Conservation Techniques and Watershed Management Activities	31 March - 22 April 2008	Kathmandu, Nepal

**ICIMOD publications on-line, order direct or download at
www.books.icimod.org**

Mountain Forum

New Executive Secretary at the MFS

Frans Neuman, a national of the Netherlands, joined the Mountain Forum as its new Executive Secretary in February 2008. Mr Neuman is a senior Information management and networking expert. After graduating as a socioeconomist, Mr Neuman advised various Netherlands ministries, IFAD, the EU, and ADB on agricultural information policies and programmes. Mr Neuman has been involved in multi-stakeholder programmes in Africa and Asia for several years, focusing on documenting and sharing information for sustainable development and establishing local information centres linked with capacity building. Before joining the Mountain Forum, Mr Neuman, was at the International Institute for Communication and Development (IICD, Netherlands) where he was responsible for systematising lessons learned in ICT4D in various sectors, and for development of national networks in Africa and Latin America.

Mountain GIS E-Conference

The Mountain Forum Secretariat, ICIMOD's MENRIS, and APMN jointly organised an e-conference on 'Mountain GIS: Promoting Geographic Information and Earth Observation Applications for the Sustainable Development of the Hindu Kush-Himalayan Region', from 14-28 January 2008. More than 750 people from over 70 countries participated. The e-conference started with special messages from Dr. Andreas Schild, Director General of ICIMOD; Mr. Jack Dangermond, President of ESRI; and Mr. Surendra Shrestha, Regional Director of UNEP for Asia and the Pacific. The topics discussed were capacity building and networking; mountain databases, tools, and methods; and applications and decision support systems. The main conclusion of the



e-conference was that 'mountain GIS' is different from 'plains GIS', and that it needs to go beyond mapmaking to developing spatial data infrastructure at all levels as well as applications for addressing real mountain issues. More information is available at: www.mtnforum.org/rs

Who's Who Exercise

The Mountain Forum Regional Networks and Secretariat are currently conducting a 'Who's Who' mapping exercise to identify key mountain stakeholders worldwide. The exercise is taking place under the frame of the collaboration between the Mountain Forum and the Mountain Partnership. The stakeholders will be identified by key thematic areas (natural resources, livelihoods, climate change, and cross cutting issues) as well as by region and country. Access to the profiles of the key organisations is expected to enhance collaboration, partnership and networking among mountain stakeholders to promote the Mountain Agenda at the regional and global levels.

Asia-Pacific Mountain Network (APMN)

Asia-Pacific Mountain Network (APMN) is the Asia-Pacific node of Mountain Forum (MF), hosted by ICIMOD's knowledge management section. Established in 1994, it is an informal and democratic information network of individuals and organisations interested in the promotion of sustainable mountain development in the countries of the Asia-Pacific region. In addition to moderating two MF discussion lists (mf-asiapacific and mf-centralasia) and contributing to Mountain Forum's other activities, APMN has its own programme and webpage <<http://apmn.icimod.org>>. In March 2008, APMN had 1316 individual and 191 organisational members from a total of 39 countries.

Under ICIMOD's new strategic framework, APMN will be strengthened as a component of knowledge management and will act as the communication arm of the Centre. Services to members will be maintained, while the network will be developed overall as a channel for regional and global communications providing services for project and programme activities. A close association is envisaged with the decentralised hub of the Mountain Partnership Secretariat to be established at ICIMOD. SDC has generously agreed to support APMN in 2008; additional funding will be secured through service activities. Currently, APMN is developing communication tools to support the Biodiversity

Conservation Initiative of the Mountain Partnership, with a focus in the first instance on the Mountain Twinning Programme between Gran Paradiso National Park (Italy) and Sagarmatha National Park (Nepal).

The winter issue of the APMN bulletin covers a range of topics including climate change impact in mountain areas, education for sustainable development, ICT for rural development, and conservation in protected areas. The bulletin is available online at http://apmn.icimod.org/publications/APMN-bulletin_vol_8_no_2.pdf.



Tek Jung Mahat

Mountains and children: hope for the future

New Memoranda of Understanding and Agreements Signed August 2007 - March 2008

Regional Rangeland Programme

The third phase of the Regional Rangeland Programme (January 2007 to December 2009) is continuing to collaborate with partner institutions in the regional member countries. The objective of the programme is to promote ecologically appropriate, socially equitable, and gender sensitive innovations to enhance the livelihood of herders and the condition of rangeland ecosystems. To carry out the joint programme activities, letters of agreement were signed with the following six institutions in the second-half of 2007:

- Aga Khan Rural Support Programme, Chitral, Pakistan
- National Trust for Nature Conservation, Kathmandu, Nepal
- Chengdu Institute of Biology, Chengdu, China
- Sichuan Grassland Sciences Academy, Chengdu, China
- Tibet Academy of Agricultural and Animal Sciences, Lhasa, TAR, China
- Planning Commission Secretariat, RGoB, Thimphu, Bhutan

A remarkable feature of the rangeland programme is the increased counterpart contribution from its programme partners. ICIMOD, on behalf of the programme donor, contributed cash funds of about 15% of total estimated costs. The programme partners committed the remaining 85% of the costs in cash, kind, and services.

Medicinal and Aromatic Plants Programme in Asia

The Medicinal and Aromatic Plants Programme is working with programme partners in five regional member countries and Sri Lanka. A letter of agreement was signed in October 2007 with CSK Himachal Pradesh Agricultural University, Palampur, India (covering a one-year extension phase from February 2007 to February 2008) to carry out gap filling activities with co-financing from the Ministry of Rural Development, Government of India. The programme implemented by the CSK Himachal Pradesh Agricultural University promotes the organic cultivation of medicinal, aromatic, and dye plants in degraded and marginal lands under agro-forestry systems in the state of Himachal Pradesh. Likewise, a memorandum of understanding was signed with German Technical Cooperation (GTZ), Private Sector Promotion-Rural Finance (PSP-RUFIN) Nepal (for the period December 2007 to June 2008) to build programme partner capacity in pro-poor marketing; enterprise development; value chain analysis and development; and micro, small, and medium enterprise finance.

Securing Livelihoods in the Uplands and Mountains of the HKH

The Livelihoods Programme is working with programme partners in six regional member countries. The objectives of the programme are to introduce and support innovations that sustainably improve the livelihoods of poor and disadvantaged people; to build capacity and promote the development of pro-poor



Narendra Bajracharya

Signing of Memorandum of Understanding on Eco Everest Expedition

institutions; and to foster improved policy dialogue. A letter of agreement was signed in September 2007 (covering the period up to October 2008) with The Missing Link, Guwahati, India to facilitate participatory policy development on shifting cultivation in selected states of North East India.

Eco Everest Expedition 2008

In January 2008, the Centre signed a memorandum of understanding with Asian Trekking, Kathmandu, Nepal to organise the Eco Everest Expedition 2008, one of the major activities in ICIMOD's Silver Jubilee celebrations. The aim of the Expedition is to draw the attention of the global community to the problems caused by melting glaciers due to climate change, the threat posed to local communities and infrastructure by glacial lake outburst floods, and the need for environmental conservation of fragile mountain ecosystems in the wake of global warming. The Eco Everest Expedition has two

independent components: the first, an Everest climbing expedition, and the second, research and field investigations combined with special events.

Geo-Based Solutions for Sustainable Mountain Development

ICIMOD is one of the main regional institutions promoting geo-based solutions for sustainable mountain development in the Hindu Kush-Himalayas. It aims to be an internationally recognised resource centre for geo-information and earth observation applications. Towards this end, the Mountain Environment and Natural Resources Information Systems (MENRIS) programme of ICIMOD is undertaking capacity building and networking, integrated geo-data management, and development of mountain-specific application and decision support systems, as well as serving as a clearing-house. The Centre signed three memoranda of understanding in March 2008 on joint initiatives in promoting geo-based solutions:

- Department of National Parks and Wildlife Conservation, Kathmandu, Nepal and Keio Research Institute at SFC, Keio University, Japan on a real-time monitoring and early warning system for Imja glacial lake in Sagarmatha National Park, Nepal
- National Trust for Nature Conservation, Lalitpur, Nepal on developing an interactive mapping and information system and spatial visualisation of the Bagmati Watershed, Nepal, which will contribute to development of a comprehensive plan of action for restoration and management of the river system
- Centre for GeoInformatics (Z_GIS), Salzburg University, Austria on promoting mountain-focused geographic information courses.

Prem Manandhar, pmanandhar@icimod.org

Outreach Activities

ICIMOD's Agenda on Climate Change Covered by Japanese Media

The First Asia Pacific Water Summit (APWS), a high level conference held in Beppu Japan from 3-4 December 2007, generated a lot of interest in ICIMOD's work on climate change, especially focusing on Himalayan glaciers, glacier lakes, and the impact of climate change on the people and environment.

The Director General and senior ICIMOD team members participated in this important event. ICIMOD organised a panel session on 'Climate Change, Glaciers, and Water Resources in the Himalayan Region'. The session was attended by His Imperial Highness the Crown Prince of Japan, former Prime Minister and Chairman of the APWS, Mr Mori, the Prime Minister of Bhutan,



Press briefing by Basanta Shrestha aired on television, 5 December 2007

ministers from ICIMOD's regional member countries, and other high level dignitaries from the UN, multilateral and international agencies, and from Japan.

The forum proved to be an effective platform for ICIMOD to increase the visibility of its work at the global level and provided an excellent opportunity for ICIMOD to highlight the importance of the entire Himalayan region in the global ecosystem, in particular its role as the water tower of Asia, and the growing negative impacts of climate change. During the Summit and on subsequent visits to Japan, many outreach activities were carried out with the Japanese media on issues of climate change impact in the Himalayan region.

Prior to the APWS, the Japanese media sought information on these issues and media teams from Asahi Shimbun and TV Asahi interviewed ICIMOD

experts in Nepal. Other TV stations were in touch with ICIMOD via email including NHK World News and Formulation Incorporated, Japan. At a press conference organised by the Japanese Press Club and United Nations Information Centre on 5 December, Basanta Shrestha briefed the press on the issues of climate change and their impact on the Himalayas. Major television news channels covered the story in Japan in a comprehensive manner. NHK World News brought out a documentary, telecast on 4 January 2008, with a section devoted to the Himalayas. Overall, there was wide coverage of the Summit in Japan, and the issues raised, in the print media and on television, before, during, and after this important event. The Japanese media are highly sensitised to the issue of global climate change and Japan's role, especially in view of the G-8 Summit to be held in Japan in mid 2008.

Basanta Shrestha, bshrestha@icimod.org

Celebrating 25 Years of ICIMOD for Mountains and People

Focusing on Climate Change and Adaptation in the Himalayas

2008 marks ICIMOD's 25th anniversary of working for mountains and people in the Hindu Kush-Himalayan region – the Centre was established in December 1983. ICIMOD is celebrating with a year-long series of events aimed at raising awareness of the impacts of climate change; the need to enhance the adaptation and resilience of mountain communities; and ICIMOD's way forward. We hope that these events will also help bring ICIMOD to the attention of a larger public – regionally and globally. Some of the major events are highlighted below.

Eco Everest Expedition 2008

<http://www.ecoeverest.net.np>

The Eco Everest Expedition 2008 is climbing Mount Everest to raise awareness of the impacts of climate change in the Himalayas. Dawa Steven Sherpa of Asian Trekking is leading the expedition, which is being supported in partnership with ICIMOD and the United Nations Environment Programme (UNEP). The expedition will field test eco-friendly approaches to mountain climbing. Parallel to the climbing expedition, some research is being carried out to monitor glaciers and glacial lakes in the region and gather information to help communities and develop early warning systems. Two field expeditions have been undertaken – one to Dig Tsho Glacial Lake to measure the present size of the lake and one to Imja Tsho Glacier to investigate the status of the glacier. ICIMOD together with the Department of National Parks and Wildlife Conservation (DNPWC), Government of Nepal, and Keio University of Japan, the National Agricultural Research Council (NARC) of Japan, and Nepal Research Education Network (NREN) is also investigating setting up an early warning system for potential glacial lake outburst floods (GLOFs) using innovative technologies.

A Trust Fund has been set up to support development of early warning systems, scientific investigations to help assess risks, monitoring of the melting glaciers,

and removal and disposal of waste in eco-friendly ways. Every climber on the expedition has contributed to the fund and contributions are now being solicited from interested individuals and organisations. (see <http://www.ecoeverest.net.np/contributors.php>)



Paribash Pradhan

Visitors at the Information Centre and '50 Years of Change' photo exhibition



Eco-friendly solar heater tested by the Eco Everest Expedition Team

'Mountains and People' Global Digital Photo Contest

ICIMOD and the Mountain Forum/Asia Pacific Mountain Network have jointly organised a global digital photo contest with the slogan 'For Mountains and People'. The competition was launched on 24 March 2008. The top two entries will receive the ICIMOD Hindu Kush-Himalayan Prize and the Mountain Forum Global Prize. In addition, four Special Mentions will be awarded, one for each category. Screening and judging will take place in the last two weeks of May; the results will be announced before World Environment Day on June 5. The winners and other selected photographs will be exhibited at the Kathmandu World Environment Day celebrations and on other relevant occasions. Over 1000 photos have been submitted from 65 countries. For

details see <<http://www.icimod.org/photocontest>>.

The Expedition was officially launched at the Everest Base Camp on 18 April 2008. A traditional Buddhist religious ceremony or 'puja' was conducted to mark the start of the climb. Dr. Andreas Schild handed over the ICIMOD Silver Jubilee flag to Dawa Steven Sherpa to take to the top of the world. An Eco Everest Information Centre was opened, as was a photo exhibition (see box). A series of scientific reports, dispatches, photographs, and other updates related to the expedition 2008 have been posted at <www.ecoeverest.net.np>.

World Environment Day 2008 (5 June)

E-discussion, 'Building Resilience of Mountain Communities to Climate Change'

An e-discussion on 'Building Resilience of Mountain Communities to Climate Change' was organised by ICIMOD's Asia Pacific Mountain Network together with the United Nations Environment Programme (UNEP-ROAP); the Ministry of Environment, Science and Technology, Government of Nepal (MoEST/GoN); and the Mountain Forum Secretariat (MFS), from 30 April to 14 May 2008. The thematic moderation was provided by ICIMOD climate change experts. The discussion was divided into three areas: (i) concept and methods of assessing impacts, vulnerability, and adaptation; (ii) climate change adaptation experience; and (iii) limits and barriers to adaptation and desired policy responses. The discussion contributions will be synthesised and the report sent to New Zealand, the host country for the World Environment Day 2008 celebrations, as well as being shared online and offline.

Nira Gurung, ngurung@icimod.org

Photo Exhibition: Himalaya - Changing Landscapes (April - December)

A photo exhibition 'Himalaya - Changing Landscapes' is being organised by ICIMOD in collaboration with The American Alpine Club, The Mountain Institute, and others. The exhibition contains a unique collection of repeat panoramas of mountains, valleys, and glaciers taken in the 1950s, and retaken in the past few years, as well as photographs of the scientific teams conducting their research in the 1950s, and mostly recent photos of the Khumbu people. The photographs provide a striking visual impression of how climate change and glacial melting are affecting the Himalayas, and the changes that have taken place in the climatic, cultural, and physical landscape of the Khumbu over the past half century. A customised version was unveiled at Everest Base Camp on 18 April under the title '50 Years of Change - Glaciers, Landscapes, People and Resilience in the Mount Everest Region'. The exhibition is expected to be shown in several European countries and will also be exhibited in Kathmandu for ICIMOD Day on December 5.

Other Outreach Activities

October 2007 to March 2008

- GIS Day 2007, 14 November 2007
- Sajha Prakashan Exhibition (Grand Booksale), 14-23 November 2007
- Cottage Industry Festival 2007, 6-10 December 2007 (CRT represented ICIMOD)
- International Mountain Day 2007 Celebration, 11 December 2007
- ICIMOD's Anniversary, 5 December 2007
- World Wetlands Day, 2 February 2008

Recent ICIMOD Publications [October 2007 to March 2008]

The following are the major documents published between November 2007 and March 2008. The three prices quoted are applicable to developed countries, developing countries, and ICIMOD's regional member countries respectively, and include post and packing. Publications are available at a reduced rate at the Centre itself. Publications can be provided free-of-charge to institutions actively involved in sustainable development of the greater Himalayan region. Order on-line (see below) or from the Distribution Unit, distri@icimod.org, or download from <http://books.icimod.org>



ICIMOD Sharing Knowledge on Disaster Risk Reduction in the Himalayan Region: Proceedings of two workshops on planning processes, social inclusion, and local knowledge for disaster preparedness
 ISBN 978 92 9115 086 1
 Online publication (2008)

This report is the last in a series of publications prepared under the project 'Living with Risk – Sharing Knowledge on Disaster Preparedness in the Himalayan Region', implemented by ICIMOD during 2006 and 2007 and funded mainly by the European Commission through their Humanitarian Aid department (DG ECHO) as part of the Disaster Preparedness ECHO programme (DIPECHO) in South Asia. The book (published on-line only) documents the results of two workshops – one early in the project which looked at the status of disaster preparedness planning in the region, and one at the end of the project which looked at social inclusion in disaster preparedness plans. It provides a short background to the project and workshops, a synthesis of the major findings and recommendations, and details of the proceedings. The publications, training sessions, and workshops were undertaken in the context of the 'Hyogo Framework for Action 2005-2015' which recommends that regional organisations should promote sharing of information; undertake and publish baseline assessments of disaster risk reduction status; and undertake research, training, education, and capacity building in the field of disaster risk reduction.



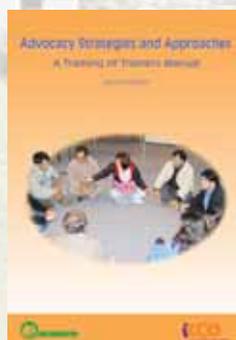
Turin, M. Linguistic Diversity and the Preservation of Endangered Languages: A Case Study from Nepal,
 Talking Points 4/07. 41p
 ISBN: 978-92-9115-055-7
 Price: \$ 10/7/5

In this issue of Talking Points, anthropologist Mark Turin draws our attention to the alarming phenomenon of loss of many of the world's spoken languages, especially minority languages, and the cultures

associated with them in the context of contemporary Nepal and the Himalayan region. A large number of Nepal's over 100 mother tongues are in danger of being wiped out, reduced to mere markers of identity if nothing is done to reverse the trend. Turin thus raises awareness about the importance of language protection programmes that support mother tongue literacy and educational reforms to preserve language and culture. ICIMOD supports these discussions in recognition that they form a part of conserving mountain biological and cultural heritage.

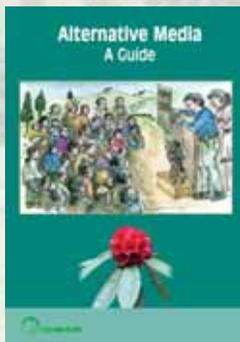


Subedi, N.R. Advocacy Strategies and Approaches: a Resource Manual (2nd edn).
 120p. ISBN: 978 92 9115 081 6
 Price: \$ 15/10/7.50



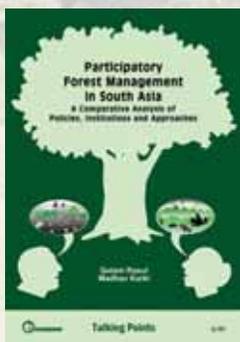
Subedi, N.R. Advocacy Strategies and Approaches: a Training of Trainers Manual (2nd edn) 154p.
 ISBN: 978 92 9115 083 0
 Price: \$ 20/15/10
 Both volumes: \$25/20/14

These two manuals have been developed for potential trainers of community-based organisations (CBOs) in the Hindu Kush-Himalayan region as well as for advocates themselves. The Training Manual provides a guide for conducting training on advocacy applicable to a variety of mountain development issues and themes. The Resource Manual provides more in-depth material on the subjects contained in the training manual. The books are intended to provide clarity on the concept of advocacy and to help equip CBOs and their networks with tools, strategies, and techniques to help them as they assist mountain people articulate their needs and perspectives to governments, policy makers, and development organisations. Both manuals are also likely to appeal to development practitioners and others interested in promoting people-centred and sustainable mountain development.



ICIMOD. **Alternative Media : A Guide** ISBN: 978 92 9115 073
Online publication

This brief guide presents a summary of traditional methods of communicating like street theatre, puppet shows, and songs and dance, and their use to communicate messages related to development. The guide is an offspring of ICIMOD's Alternative Media Project funded by Ford Foundation which ran from 2002 to 2005. The aim was to explore traditional media and forms of communication in local communities and use them to deliver messages that could contribute to the improvement of livelihoods. Development organisations and other knowledge providers can develop alternative media products in partnership with a community and then communities themselves can carry out the process of delivering information. The process empowers communities because they control the creation and transmission of useful information. The guide was prepared to share the experiences of the project with others interested in development communications at the grassroots. It presents some of the project activities, and describes different types of media and how and when they can be used.



Rasul, G.; Karki, M. **Participatory Forest Management in South Asia, A Comparative Analysis of Policies, Institutions and Approaches.** Talking Points 5/07. 31p ISBN 978 92 9115 0786 Price: \$ 10/7/5

Several participatory forest management approaches have emerged in different countries in South Asia in the effort to develop an effective institutional framework and mechanisms for the management of forest resources. These different approaches have different features, characteristics, and degrees of participation by local forest users, and thus different implications for the management of forest resources and the livelihoods of forest-dependent people. This discussion paper makes an attempt to analyse the participatory forest management approaches adopted in Bangladesh, Bhutan, India, and Nepal, on the basis of primary and secondary information. The models are compared and contrasted using specific criteria such as level of institutionalisation, tenurial security, degree and quality of local participation, decision-making authority, rights and obligations of stakeholders, benefit sharing arrangements, and actual practices. Measures to overcome weaknesses and to promote participatory forest management are suggested.



ICIMOD. **First International Decade of the World's Indigenous People in Asia, 1995-2004: Assessment Synthesis Report.** 78p ISBN 978 92 9115 069 4 Price: \$ 15/10/7.50

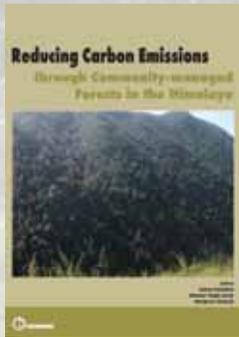
This publication synthesises the findings of individual assessments of the impact of the First International Decade of the World's Indigenous People in ten selected countries of South and Southeast Asia. The assessments were carried out in cooperation with the Tebtebba Foundation in the Philippines, and were supported by the International Fund for Agricultural Development (IFAD). The book highlights some important successes of the Decade, including increased solidarity among indigenous peoples, and the development of international tools to support initiatives of indigenous peoples as well as some enabling laws and constitutional provisions to enhance their access to resources. However, it also brings out failures which include the lack of awareness about the Decade among policy makers, development practitioners, and the public in general; serious implementation gaps in national laws and international conventions; and the lack of recognition of indigenous peoples rights.



Kruk, E.; Hummel, J.; Banskota, K. (eds) **Facilitating Sustainable Mountain Tourism** Vol. 1: Resource Book. 158p ISBN 978 92 9115 056 4 Vol. 2: Toolkit. 91p ISBN 978 92 9115 066 3 Prices: Volume 1: \$ 20/15/10; Volume 2: \$ 15/10/7.50; both volumes: \$ 30/22/15

This resource book (Volume 1) and toolkit (Volume 2) bring together the practical concepts, tools, and approaches needed to develop a type of mountain tourism in the Himalayas that can generate sustainable benefits for mountain people while conserving the breathtaking beauty of the environment. The materials are a revised and expanded version of the course materials used in a training course held in 2006 by ICIMOD, the Netherlands Development Organisation SNV/Nepal, and the Nepal Tourism Board (NTB), under ADB's SASEC Plan, for representatives of national and state tourism organisations from various Himalayan countries. They

provide a comprehensive resource document for development of a sustainable mountain tourism approach with illustrative case studies from the Himalayan region.



Banskota, K.; Karky, B. S.; Skutsch, M. (eds) **Reducing Carbon Emissions through Community-Managed Forests in the Himalaya**. 85p ISBN 978 92 9115 058 8 Price: \$ 10/7/5

The world's average temperature has risen more in the last 100 years than in the last 10,000. Of the 10 recorded warmest years in history, nine were recorded during the last decade. Greenhouse gases from human activities are among the major causes for the alarming trends. Two of the most recent policy instruments devised to address these issues are the United Nations Framework on Climate Change and the Kyoto Protocol, which offers creative, market-based measures that allow emission producers to offset their emissions by paying others to carry out emission reducing activities. But the solutions offered under the Protocol fail to consider one important source of emissions in developing countries – deforestation and forest degradation. The Kyoto Protocol commitments will be reviewed in 2012, and possible changes are now being debated. This book provides a timely addition to the discussions, and urges the inclusion of avoided deforestation in carbon offset measures in the Framework on Climate Change. Field studies in India and Nepal show how communities can carry out the measurements needed to calculate carbon sequestration, the basis for calculating the impact of avoiding deforestation. Including 'avoided deforestation' in climate change policy will not only help the global climate, it will provide a way for millions of poor people in developing countries to benefit directly, and will help stop the destruction of forests and encourage further conservation.



Sharma, E.; Chettri, N.; Gurung, J.; Shakya, B. (Comp) **The Landscape Approach in Biodiversity Conservation: A Regional Cooperation Framework for Implementation of the Convention on Biological Diversity in the Kangchenjunga Landscape, Framework Paper**. 29p ISBN 978 92 9115 060 1

This Framework Paper presents the Regional Cooperation Framework developed for implementation of the Convention on Biological Diversity (CBD) in the southern part of the Kangchenjunga landscape, which includes parts of Nepal, Sikkim (India), and Bhutan. The Framework is the result of a long process that started with a pilot initiative on transboundary biodiversity management. It is intended as a guide, with provisions that can be adapted and applied to the individual countries in the landscape to achieve cooperation for implementation of the CBD at national level. Based on the principles of the CBD, and taking into account the national biodiversity strategies and action plans of each of the three countries, it gives directives on four constitutive elements of biodiversity conservation: transboundary biodiversity conservation, scientific and technical cooperation, information exchange and sharing, and regional guidelines and soft legal instruments; and touches upon the implementation mechanisms and identification of stakeholders and their key roles at local and national, and regional and international, levels. The paper discusses the concept of transboundary landscape management within the context of conservation of biological diversity and the CBD, describes the historical development of transboundary biodiversity conservation and cooperation in the eastern Himalayas and the development of the Framework, as well as presenting the Framework itself.

issn 1013-7386

Newsletter of the **International Centre for Integrated Mountain Development**

Editorial contact

ICIMOD Publications, imco@icimod.org

Guest Editor: Kamal Banskota; Issue Coordinator: Nira Gurung; Production team: Susan Sellars (Consultant Editor);

A. Beatrice Murray (Senior Editor); Asha Kaji Thaku (Editorial Assistance); Punam Pradhan (Design and Layout)

Cover photo by Paribesh Pradhan – Women carrying fodder to Thame in Langboche valley, Khumbu region, Nepal

Printed by Sewa Printing Press, Kathmandu, Nepal

The views and interpretations in this paper are those of the authors. They are not attributable to the International Centre for Integrated Mountain Development (ICIMOD) and do not imply the expression of any opinion concerning the legal status of any country, territory, city, or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

Reproduction

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. ICIMOD would appreciate receiving a copy of any publication that uses this publication as a source. No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from ICIMOD.

This publication is available in electronic form at www.icimod.org

Eco Everest Expedition 2008



Departure



Dinner with the Chilean media team



Puja ceremony at base camp



Celebratory cake at base camp



Handing over the ICIMOD flag



Sensor and antenna for WiFi network at Imja lake



Collecting refuse at Everest base camp



The Information Centre

International Centre for Integrated Mountain Development
Khumaltar, Lalitpur, G.P.O. Box 3226, Kathmandu, Nepal
Telephone: (977 1) 5003222
Fax: (977 1) 5003299
Email: info@icimod.org

www.icimod.org